



American Aviation

25c

The Magazine of Air Transportation

FEB. 15, 1949

One of Our Own

THE CONSTANT complaint in aviation has been the lack of experienced and informed men in top government posts. Yet when a qualified and experienced man is found who will step out of private industry into a thankless government position, aviation folk are prone to start throwing barbs before the gent has had time to take off his hat.

W. W. P.
In a field yet too young to have produced a flock of retired elder statesmen eligible for such government positions, we thought that all of aviation was fortunate when Del Rentzel became

the CAA Administrator last summer. Here was the first man in this post who possessed comprehensive, practical knowledge of the aviation operating field. He was willing to take a cut in salary to get a lot of things done in CAA that needed doing, especially in the area of communications, navigation aids, simplified regulations and extension of the airways system.

Rentzel has one characteristic which is both meritorious and a handicap—a handicap in a bureaucratic Washington filled with intrigue and personal empire-building politics. He is forthright and honest, more concerned with doing a job than finding a permanent seat for himself in government. He likes to put the cards face up on the table. He is perplexed by the machinations, the throat cutting, the maneuvering and the petty politicking that goes on in a government agency that has expanded too rapidly for efficient administration.

Rentzel has made some mistakes and is busy trying to rectify at least one of them. He will continue to make some mistakes and there isn't a man living who could handle the CAA job without making them. But his over-all accomplishments to date have been worthy of applause. He can't please everyone, but his batting average will be very high. It's far better, we think, to have an experienced and honest Administrator who knows aviation backwards and forwards, than to have a politico trying to placate everyone and accomplishing nothing; or worse yet, a layman who never knows what's going on in his own agency.

Criticism of Rentzel has been centered in a few spots within the aviation field and a few spots within the CAA. The aviation critics have either been



NWA's Stratocruiser Manager

John F. Woodhead, Northwest Airlines' manager of flight operations and one of its veteran pilots, has been assigned the job of "breaking in" the airline's fleet of 10 Boeing Stratocruisers. As manager of Stratocruiser operations, Woodhead will be responsible for shake-down, indoctrinations, training, proving and introduction of the transport into airline service. He first joined NWA in 1932, later flew as co-pilot and captain.

In This Issue

- | | |
|--|-----------|
| Airline Labor Unrest—Disputes Keep
Mediation Board Busy | 9 |
| Behind C-W Shake-Up—Merger Talk
Follows Curtiss-Wright Management Shift | 10 |
| Far Away Airports—Ground Travel Gets
Slower as Planes Go Faster | 12 |

REFERENCE COPY

(Page 6)

OTHER AVIATION PUBLICATIONS



Seventy Days of TORTURE!

Fine Arizona sand, whipped by 100 mph winds, seeks to sting to death this AiResearch actuator and its tiny precision motor.

Later, this equipment will undergo other torture tests—the most gruelling ever devised—to prove its performance ability.

All told, 2000 hours will be devoted to such punishment as searing oil sprays, corrosive salt baths, attack by 11 kinds of fungi under 100% tropic humidity, baking, freezing, jolts of high voltage, etc. Finally, in a copper-lined vault, the motor must prove that it will not create radio interference.

The ability of AiResearch to design, manufacture and test equipment that can keep on doing its job, come hell or high water, is one reason the majority of all high-altitude and jet type aircraft produced in the U.S. are AiResearch equipped.

• Whatever your field—AiResearch engineers—designers of rotors operating in excess of 100,000 rpm—invite your toughest problems involving high speed wheels. Specialized experience is also available in creating compact turbines and compressors; actuators with high speed rotors; air, gas, and fluid heat exchangers; air pressure, temperature, and other automatic controls.

Write AiResearch Manufacturing Company
Los Angeles 45, California





The Canadair Four ... offers the highest performance at the lowest cost of any four-engined aircraft in the world today. Already serving Trans-Canada Air Lines and soon to serve British Overseas Airways and Canadian Pacific Air Lines, Canadair aircraft will be standard equipment on air lines that together operate around the world.

Canadair Limited
MONTREAL, CANADA

BACKGROUND & TRENDS

Among the Airlines

There continues to be much conversation when industry people meet about necessity for **lower fares**. There's one airline president who's thinking about instituting lower domestic fares with a combination passenger-cargo plane. He also thinks industry may eventually end up with three types of service: deluxe, standard and coach. And there's another airline that's so convinced lower fares are coming that it's gearing all its thinking to a fare level lower than today's . . . Only man left in the U. S. who wants **higher airline fares** is **Warner Hord**, chief of CAB's accounting and rates section, who has been trying to expert airline operations by telling the lines what types of equipment to buy, how many seats to put in their planes and how often to operate flights. Hord has actually been influential in stalling approvals of some low-fare experiments even though that's out of his department. He is being bitterly assailed on all sides by industry people who say he hasn't the foggiest idea of what he's talking about.

Capital Airlines' Chicago-New York coach service has very nice 75% load factor since beginning of operations. . . . **Tourist fares** on international airlines are getting another go-round by top world traffic people at an unofficial IATA conference in Brussels. Subject of low fares is highly controversial, but nothing officially can be done until next full meeting . . . **Peruvian International Airways**, which has been having financial difficulties, is to receive financial assistance from Peruvian government. Indication of PIA difficulty was attachment of company property at Washington National Airport by Air Terminal Services to settle a \$6,969 food bill . . . All parties concerned are hoping to get the pilot differences on **Pan American Airways'** Latin American Division and **Panagra** settled without a strike. PAA pilots oppose Panagra pilots flying the leased route between Canal Zone and Miami. Tough problem will probably be worked out without incident.

Quite a few months ago, **Amos Culbert**, v. p. of American Airlines, assisted by **Bob Griffith**, now with Delta Air Lines, made an organization study for AA. One of chief points was an intensified decentralization of the system. Report has been shelved for some time, but now look for it to be implemented. Moving of some Washington offices to New York was a step. Latest is moving of **C. W. Jacob**, v. p.-secretary, from Washington to New York . . . Reports have it that **Scandinavian Airlines System** and the big **KLM** (Dutch) system are getting closer together. Any sort of merger is out of the question, of course, but pooling of traffic and sales facilities, and other forms of cooperation, are very much in the wind for the future . . . **Southern Railway System** has taken newspaper advertising space to throw backhanded jibes at airlines and other transport regarding alleged subsidies. Southern says it is self-supporting, but it wasn't always that way.

Paul Richter, president of TACA Airways, denies rumors that he has resigned or is about to resign.

Rentzel Is "In"

Published rumors about Del Rentzel being shifted out of his job as CAA Administrator are just so much whistling in the wind. The President has given Rentzel full White House blessing and backing. A few of the undercover CAA ringleaders of a campaign against their chief will have to toe the line or be looking for other jobs.

More on Damon

Although Ralph Damon's salary as president of TWA is reliably reported to be \$75,000 a year, his take-home

(Continued on next page)

AMERICAN AVIATION

The News Magazine of Air Transportation

Vol. 12 No. 18



Feb. 15, 1949

1025 Vermont Ave., N.W.
Telephone—STerling 5400

Washington 5, D. C.
Cable—AMERAV

Editor and Publisher

WAYNE W. PARRISH

Editorial Board:

ERIC BRAMLEY DAVID SHAW LEONARD EISENER
Executive Editor Chairman Managing Editor
KEITH SAUNDERS Assistant to the Managing Editor

Editorial Associates: Gerard B. Dobben, Clifford Guest, James J. Haggerty, Jr., Fred S. Hunter, W. D. Perreault, Daniel S. Wentz II.

Director of Advertising: Stephen R. Kent
Business Manager: John H. Poole.

American Aviation is published 1st and 15th of each month by American Aviation Associates, Inc., Washington, D. C. Printed at the Telegraph Press, Harrisburg, Pa. Subscription rates for United States, Mexico, Central and South American countries—\$3.00 for 1 year; \$5.00 for 2 years. Canada—\$3.50 for 1 year; \$6.00 for 2 years. All other countries—\$4.50 for 1 year; \$8.00 for 2 years. Entered as Second Class matter in Washington, D. C., and Harrisburg, Pa.

Publishing Corporation: American Aviation Associates, Inc., Wayne W. Parrish, president; Albert H. Stackpole, Eric Bramley, David Shawe, vice presidents; E. J. Stackpole, Jr., secretary-treasurer.

West Coast Office: Park Central Building, 412 West Sixth St., Los Angeles 14, Calif. Trinity 7997. Fred S. Hunter, manager.

Correspondents in principal cities of the world.

Other Publications

American Aviation Daily (including **International Aviation**): Published daily except Saturdays, Sundays, and holidays. Subscriptions: \$16 one month; \$180 one year. Clifford Guest, managing editor.

American Aviation Directory: Published twice a year, spring and fall. Single copy \$5.00. Dallas R. Long, managing editor.

Official Airline Guide (formerly **American Aviation Air Traffic Guide**): Monthly publication of airline schedules, rates and regulations. Subscriptions: U. S. A and countries belonging to the Pan American Postal Union, including Spain and the Philippines, \$9.00 one year; Canada \$9.50. All other countries \$11.00. Published from editorial offices at 139 North Clark St., Chicago 2, Ill. State 2-2154. C. N. Johnson, production editor.

INDEX

Air Cargo	39	Fixed Base	42
Air Terminals	37	Index to Advertisers	45
Airline Commentary	21	Letters	46
Background & Trends ...	4	New Products	34
Between the Lines	18	Operations and Maintenance	23
Books	46	Over the Counter	41
Calendar	21	People	23
Editorial	1	Production Spotlight	17
Extra Section	31	Traffic and Sales	40
		Wings of Yesterday	46

BACKGROUND & TRENDS

(Continued from Page 4)

pay will be far less than that. Howard Hughes wanted Damon to accept a higher salary but Damon refused. Hughes not only gave verbal assurances to Damon that he wouldn't sell the international routes of TWA, but it's understood that Damon's 5-year contract carries a clause stating that Hughes cannot sell the route without the full consent of the president. It is also understood that the contract carries a liberal severance pay clause for Damon in case he leaves the company for any reason. It's one of the best executive contracts ever drawn up in the airline business. He assumed his new duties Feb. 10.

Only A Few Generals

One of numerous reasons for **Eastern Air Lines'** record of earnings at a time when other airlines have been in the red is its tightly-knit organization. Recent study revealed that EAL has relatively few supervisors while some of the other larger airlines had a supervisor for every few employees. The study also showed that EAL is one of the highest paying airlines in the country, contrary to popular misconception.

Case for Free Rides

CAB's stiff and unbending prohibition against **free transportation** has handicapped some of the U. S. international airlines who feel that they should be permitted to send prominent authors, lecturers, photographers and writers to foreign countries in the interest of route and traffic development. They say foreign airlines are doing this and reaping much publicity in the U. S. and rest of the world. They would make everything a matter of public record by having CAB clear all requests. This, they argue, would prevent abuse of free transportation privilege. CAB's attitude has long been considered shortsighted by those concerned with competitive situations.

Around the Post Office

Four-cent air mail postcard, which Post Office didn't want but which Congress wrote into law to start last Jan. 1, is a first-class flop so far . . . **One-cent raise** in domestic air mail postage rate hasn't had an adverse effect on volume.

Hoover Commission & Commerce Dept.

Here's the preliminary thinking of the Hoover Commission (which is working on organization of the government's executive branch) on the Department of Commerce: A great many of the government's non-regulatory transportation activities would be grouped under an Assistant Secretary of Commerce in charge of transportation. Under him would be a Director of Aeronautics and a Civil Aviation Division (in addition to merchant marine, public roads, etc.). Position of Assistant Secretary of Commerce for Aeronautics (now held by John Alison) would be abolished.

This division would take over from CAA such things as airway development and maintenance, airport planning and safety regulation. In other words, it would be practically a re-naming of CAA. From CAB would be taken safety activities and "route pattern development" although no one seems quite ready to explain what the latter means. The division would also be responsible for "air mail subsidies." Preliminary thinking is that subsidies will be necessary for some time in the international field but that they should be divorced from air mail pay and "placed in the open."

Pure regulatory transportation functions would remain with independent agencies such as CAB, ICC, etc. Recommendation for an Assistant Secretary of Com-

merce to handle transport is in place of a separate Department of Transportation, to which the commission is flatly opposed.

Remember: This is preliminary, first-draft thinking. There have been as many as 12 drafts of some commission reports.

People

Glenn L. Martin's dinner in Washington recently honoring his mother on her 85th birthday was one of the finest affairs the capital has seen in some time. Not many aviation people, but plenty of high government officials attended . . . Airline men in Miami are giving a big hand to **A. B. Curry**, director of the Dade County Port Authority, for his work in running and expanding Miami's 36th Street Airport . . . **W. I. Van Dusen**, who for many years was director of public relations for Pan American Airways and is still a consultant to PAA, is now a top factor in the reorganized Curtiss-Wright Corp. He was brought into C-W some time back by Guy Vaughan as a consultant, but now has an office in the company and is devoting most of his time to C-W matters . . . A public relations gal not to be underestimated is **Dr. Mila Alihan**, of Kollsman. Personable and talented, she's building a lot of goodwill for the Long Island company . . . **N. A. (Dick) Brown** has left **Airports and Air Carriers** to become assistant to Frank Tichenor, editor and publisher of **Aero Digest**. Dick's aviation career began in 1922. In 1938 he founded **The American Pilot** which he sold in 1943 to Haire Publications, and Dick went along as general manager . . . Much credit to **S. Paul Johnston**, executive secretary of Institute of the Aeronautical Sciences, for making annual IAS Honors Night dinner in New York on Jan. 24 the most efficiently-run affair yet. It was well attended, with black ties predominant. **Jack Northrop**, retiring president, proved to be an excellent toastmaster . . . **A. R. Bone, Jr.**, American Airlines' western regional v. p., is recuperating from a fractured vertebra, the result of a fall.

Odds & Ends

Walter Masterson's **Aircraft & Equipment News**, a monthly with 50,000 free-distribution copies for the past three years, has suspended temporarily "until such time as conditions in the Owner-Operator-Airport field become sufficiently stabilized to permit its publication at a profit."

News in Brief

Pan American Airways on Mar. 1 will extend its New York-San Juan coach type service down the east coast of South America to Buenos Aires. Fare reductions will be about 20% below regular rates, and round-trip tickets beyond Puerto Rico will carry 5% discount. Equipment will be 52-passenger DC-4's.

United Air Lines "definitely is not considering" transcontinental coach service, W. A. Patterson, UAL president, told **American Aviation Daily** on Jan. 26, spiking rumors that UAL was planning a \$105 coast-to-coast DC-4 fare.

Florida Airways lost a round in its fight for survival on Feb. 7 when CAB Examiner J. Earl Cox recommended that airline's petition for extension of certificate be denied. Florida's certificate for Route 75 expires Mar. 28 unless CAB reverses both itself and the examiner before then.

Western Air Lines' "no-meal" tariff with accompanying 5% reduction in fares went into effect Feb. 1. The 5% round-trip discount remains in effect.

EDITORIAL

(CONTINUED FROM PAGE 1)

unthinkingly trigger happy or opportunists trying to create excitement and/or readers without giving a thought to constructive aviation development. Criticism from within CAA has come from a small group of civil service old-timers who resent any newcomer trying to tell them to change their sodden ways. The minor-league empire-builders have resorted to "leaks" to newspaper columnists, magazines and organizations, but their complaints are more self-seeking and imaginary than they are real.

Rentzel is basically a good man for the job—the best the CAA has ever had. He's an aviation man. He can do much to further all aviation interests from private flying on up and down the line. His responsibilities are enormous and his task unenviable. We think he should have a very full opportunity to demonstrate himself.

Another Buck, Please

ONE OF THE latest airline revenue-producing proposals which has received a surprising amount of support is the plan to charge \$1 for every airline ticket sold.

We think the public is confused enough by the variations in round-trip fares, family plans on certain days of the week, government tax, coach fares, and whatnot, without adding to the confusion with a dollar charge for every ticket. If the plan is adopted there is certain to be resentment, not so much over the dollar itself, but over the principle involved.

A dollar-per-ticket charge could hardly be timed worse than right now when the cost of living trend has started downward. Short-haul tickets would be raised out of all proportion and if any companies feel they need more revenue for short-haul patronage the relief is through raising the basic fare and not saying, "Oh yes, in addition to the 15% Federal tax there's one dollar charge for making out the ticket."

It seems to us that it's time to simplify and stabilize on a few plans instead of starting something new every few days. Only a few months ago some airlines rushed prematurely into the newspapers with big ads announcing commuter fares before the final word had been heard on whether such fares were legal. If the dollar ticket charge actually goes into effect we'll bet it comes off in a short time, with the public wondering what it's all about.

Air travel is still too complicated and still too unnecessarily confusing. Innovations are introduced without sufficient explaining to travelers. Take the new idea of carrying bags on the Convaers. If anyone can figure out just how the average public is supposed to understand the baggage procedures with the mumble-jumble one gets at a ticket counter, he ought to get a gold medal. The airlines switch their signals too fast and too often. Passenger relations and passenger procedures are still the weakest link in air transport today. In 1946 there was an excuse. There isn't much excuse today.

An Illusion Shattered

WHEN THE New York Port Authority took over the airports in the New York metropolitan area, there was a fervent hope and expectation that a businesslike development and administration of these airports would be assured.

What has happened borders on the farcical and shatters

any illusions that the New York Port Authority is, in fact, a capable, wise and efficient non-political business agency. Some of the actions and attitudes taken by the Authority are almost childish. A group of supposedly big men, ill-advised by a staff of aides inexperienced in airport operations, found themselves out on a limb and haven't yet decided to make a graceful retreat.

The basic argument is over leases made by the airlines with the City of New York. It is a matter of record that the Authority agreed to accept these leases. But for some time the Authority has endeavored to repudiate the leases and set up some sort of new-fangled system of charges and regulations which give the airlines no stability or no security whatever.

For some odd reason the Port Authority maintains that it can't be sued in the courts. There may be sound reasons why certain types of litigation should be ruled out, since the Authority is a creature of several state legislatures. But to think that the Authority cannot be brought into the courts under any circumstances is a pompous stand with which we haven't the slightest sympathy. A two-state Port Authority claiming that it can't be sued, when the Federal government can be sued, is nonsensical.

The issues have become quite complex as the argument has proceeded but there is no evidence that the airlines haven't been willing to make concessions and to cooperate in working out a practical set of agreements. Meantime the Port Authority has blundered and blundered and is losing large revenues which it might well have been receiving if it had listened to a little sound advice. Even if by the rare chance the Port Authority finally proves that it has a sovereign status and is non-suable, it has certainly proved quite conclusively that it ain't very bright.

A New Travel Yardstick

ONE WOULD have thought that airline attorneys and economists had exhausted all of the various means of determining the amount of travel between widely separated parts of the country. But credit H. C. Timberlake with a new method—and a good one. Mr. Timberlake appeared in a CAB case the other day as consulting economist for the Minneapolis-St. Paul Metropolitan Airports Commission and he presented there a new yardstick measurement of total travel between two sections of the United States.

This yardstick is based on the volume of interchange of Federal Reserve Notes (which begin at \$5) between the Federal Reserve Banks serving the sections involved. The yardstick is not effective to determine travel between adjacent Federal Reserve Districts, but it seems to work like a charm between widely-separated ones, such as those embracing the Twin Cities and New York City.

With the cooperation of the Federal Reserve Banks, travel agencies, local banks and other agencies, Mr. Timberlake discovered the average amount of bank notes carried by travelers, and the annual volume of interchange of this paper money. There are numerous variables, but a fair approximation of the volume of travel may be obtained and it is especially useful in air transportation where the traveler is whisked from one area to another. It is an intriguing new yardstick to show travel volume and the surprising thing about it is that it has never been used before.

WAYNE W. PARRISH

AMERICAN AVIATION



Behind HIGH-QUALITY ESSO AVIATION PRODUCTS... A Great Petroleum Research Organization

Testing . . . comparing . . . proving . . . over 2,000 trained petroleum scientists and technicians are constantly at work in Esso laboratories. Their never-ending research on petroleum products assures you that Esso Aviation Products *always* meet rigid specifications for highest quality and uniformity.

Fliers along the airways of the world look to the Esso winged oval as the symbol of these standards carefully maintained. During more than 40 years of experience in the aviation field, Esso has won the respect of both great airlines and private owners for quality, dependability and service.



ESSO EXPORT CORPORATION, AVIATION DEPARTMENT, 25 BROAD STREET, NEW YORK 4, N. Y.
FEBRUARY 15, 1949



Why she's laughing over spilt milk

SPILLS used to mean big cleaning bills for airlines. Removing and dry-cleaning a wool carpet runs into heavy labor and material costs. But this problem has now been answered by B. F. Goodrich engineers—with the Avtrim Flight Rug, shown in the Capital Airlines' picture above.

Things spilled on an Avtrim Flight Rug

can be easily wiped up. Thorough cleaning can be done with soap and water or a solvent, without removing the rug. What's more, Avtrim Flight Rugs last far longer than ordinary carpets. They're easy to install. The flame-resisting sponge rubber backing provides cushiony comfort, reduces vibration. And the glorious colors add new beauty to any cabin.

Avtrim is an ideal material, too, for arm rests, baggage racks, wall paneling and many other uses. For complete information, write to *The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.*

B.F. Goodrich
FIRST IN RUBBER

AMERICAN AVIATION

New NAL Pilot Issue:

Airline Labor Disputes Continue at Record Pace

By GERARD B. DOBBEN

Airline labor disputes took up 25% of the time of the National Mediation Board in 1948 and the Board's current agenda already is giving evidence of material increases in employer-employee friction in the year ahead.

Latest important case to come to the attention of the Board involves the application of the National Pilots Association, consisting of the non-union pilots of National Airlines, for an election to determine the proper collective bargaining agent among the pilots of National Airlines. At the time this application was filed, the non-union pilots claimed to represent more than 51% of the craft and class eligible to vote in such an election.

The Board is investigating this application. There is involved the fact that National's old pilots, members of the Air Line Pilots Association who went on strike for nine months last year, only now are returning to work under a strike settlement agreement reached last fall. They have been in the process of being checked out again after a three-quarter year lay off from flight duties.

But their return is being delayed because of the unwillingness of the ALPA pilots to submit to a blanket order from the company requiring physical examinations. The pilots contend that National resorted to an old clause in the carrier-pilot contract which had never been used before to require examination of all pilots at one time.

Former chairman of CAB, James M. Landis, who mediated the strike settlement, was called in to iron out this latest difficulty. He held with the pilots against the blanket examinations but the company rejected his recommendations. As a result, the dispute was certified to National's System Board of Adjustment, and the National Mediation Board has named B. G. Patton, of Apalachicola, Fla. as the neutral to arbitrate the case. Company and all ALPA pilots involved will be bound by Patton's decision.

Slim Chance for NPA. If NMB determines that an employee election should be held and if the National Pilots Association should win, it would represent the first real break away from the leadership of David L. Behncke, president of ALPA since it was founded.

But few observers give the rump organ-

ization a chance to succeed. As a corollary step, the new pilot association is reported seeking affiliation with the Brotherhood of Railroad Engineers.

NMB, in its annual report, stated it had handled 50 airline disputes in 1948. This was 12 more than the previous year, while 1947 and 1948 combined produced 15 more airline disputes than had been handled in the previous 10 years that the airlines have been subject to the Railway Labor Act, which is administered by NMB.

Another major airline dispute is now in the hands of an Emergency Board, appointed under NMB recommendations. It involves a dispute over wages for 2,250 employees of Northwest Airlines, represented by the International Association of Machinists.

Other disputes in various process of mediation or arbitration include 1,221 maintenance and store workers of American Airlines, represented by the Transport Workers Union, CIO, and communication employees of American, represented by the American Radio Association. Both disputes involve wages.

Industry-Wide Contract? The recommendations of the President's Emergency Board in the Northwest case may form the basis for a limited industry-wide wage contract. Four major airlines have under consideration the negotiation of a single master contract covering all of their employees who are represented by the International Association of Machinists as bargaining agent. The airlines, beside Northwest, which have been in preliminary negotiations to attain this objective are: Eastern, United and TWA. Capital, it is understood, also has the plan under consideration.

IAM at present has separate agreements with 28 airlines, with an average spread of 10c an hour in classifications and wages in the individual contracts.

The proposed negotiating agreement is now being voted upon by the union membership and if approved, a joint union-management committee will meet in Chicago Mar. 1 to name a chairman and set a date for negotiating uniform wage rates and other issues.

Two other factors may ultimately affect the number of airline disputes to be handled by NMB this year. The labor market shows signs of easing. If unemployment increases, it would tend to strengthen management's hand in labor disputes, especially those dealing with wages. The other centers around cost of living indices which appear to have reached their peak and are showing some signs of coming down.

U. S. Airline Pilots Best Paid In World

The favorable economic position of U. S. airline pilots in comparison to the airline pilots of the world was emphasized in the current issue of *The Air Line Pilot*, official organ of ALPA. Commenting editorially on the tabulation below the article said, "How the airline pilots of the U. S. fare compared to the pilots of other nations, augers well for the effectiveness of ALPA. Not only do the airline pilots of the U. S., both first pilots and co-pilots, enjoy rates of compensation well above that paid in other countries, but they alone have individual and

group pilot grievance protection embodied in all of their employment agreements.

"In the field of first pilots' rates of compensation, the second highest possible top, reached by Belgian pilots after 20 years, is only approximately two-thirds of that of an American eight-year first pilot. The differential among co-pilots is even greater, the top for American co-pilots being almost double that of the second highest, which like that for first pilots is paid by the airline of Belgium."

1st Pilot Compensation Monthly

	Belgium	British	Denmark	Air France	ALPA U.S.A.
Bottom	\$ 380	\$ 333.33	\$ 218.40	\$ 522	\$ 748.08
Top	\$ 800	\$ 550	\$ 352.80	\$ 522	\$1206.38 (8 yrs.)
	(20 yrs.)		(4 yr. top)		

Co-Pilot Compensation Monthly

	Belgium	British	Denmark	Air France	ALPA U.S.A.
Bottom	\$ 220	\$ 200	\$ 176.40	\$ 200	\$ 290
Top	\$ 355	\$ 300	\$ 268.80	\$ 200	\$ 620 (6 yrs.)
	(6th yr.)		(2 yrs.)		

Maximum Hours of Work

	90-130 No Restrictions	100	120	85
Monthly	1200	1000	1200	934
Annual				1000

C-W New Deal May Head Shake-up in Plane Industry

Many an aviation hand has said ever since the war that Curtiss-Wright Corp. had too much cash in its treasury. Last spring a New York attorney by the name of T. Roland Berner made an unsuccessful attempt to gain control of the company management on behalf of a common stockholders' committee and ever since then there have been rumbblings in C-W.

The latest management shake-up, combined with a change in policy control of the company, occurred Jan. 31 when two long-time vice presidents, William D. Kennedy and Burdette Wright, were retired. This left only one officer of the company with any length of service—Robert Earle, now managing the propeller division.

Kennedy joined Wright Aeronautical 21 years ago, had built up a reputation as the finest service manager in the aviation industry, and had run the engine company as general manager until last fall when he was relieved by William C. Jordan. "Burdie" Wright ran the airplane division up to and during the war and had been with C-W 18 years.

But of even more importance to the old-time C-W was the virtual disappearance from company control of Guy Vaughan, who last fall retired to become chairman of the board. Vaughan had long said he wanted to get out of active management, and finally did so after many previous starts. But Vaughan never intended to retire completely; he wanted to be the elder statesman. Now it seemed clear that Vaughan had lost this chance, for an entirely new group had moved in.

Shields in Control. The new group was headed by Paul V. Shields, of the Wall Street firm of Shields & Co. Last year when stockholder trouble broke out, Vaughan had asked Shields, an old friend, to help him out. Shields became chairman of the executive committee and in charge of stockholder relations. Shields took his appointment seriously.

Last fall Vaughan had his choice elected president, William C. Jordan, a wealthy man in his own right who had first joined the airplane division at Columbus. But, in January, Jordan and Vaughan both found out that they no longer were running the company. It was Shields who called the shots. Jordan, it was said, was quite unhappy and never would have accepted the presidency had he known what was going to happen. Vaughan left for England a few days before the board meeting Jan. 31 on a "special assignment" for the company.

Four new board members were elected Jan 31, two of them of special interest. One is Mr. Berner who headed the stockholders' revolt last spring. Another is John A. McCone, the west

coast industrialist who was a member of the President's Air Policy Commission. The other two were Henry S. Sturgis, v.p. of the First National Bank of the City of New York, and J. V. McCarthy, v.p. and treasurer of Curtiss-Wright who was formerly with United Aircraft Corp.

How much actual cash Curtiss-Wright has laid away is somewhat vague but it's estimated at over a hundred million. It is said that thirty million could be distributed to stockholders without ever being missed. Guy Vaughan



Guy Vaughan



William D. Kennedy



Burdette Wright

wanted to hold on to the money for hard days ahead; there were others who thought it wiser to distribute some.

Bearish Approach. One veteran of the company said Curtiss-Wright had

On a Working Level

A good sign of progress in airline personnel relations came late last month in reorganization of the Airlines Negotiating Conference. Presidents of airlines were replaced by a small working group directly concerned with the problems involved.

The Conference now has a board composed of J. G. Deater, personnel director of American Airlines; Robert J. Wilson, v.p.-properties and personnel administration of Capital Airlines; W. T. Beebe, personnel manager of Chicago and Southern Air Lines; Joseph H. Brock, director of industrial and personnel relations for Eastern Air Lines; and J. L. O'Brien, director of personnel for Northeast Airlines.

These men replaced top industry executives in the belief that the new group would be a more representative board. This delegation of authority was heralded as a step forward in a realistic approach to better employer-employee relations.

failed to undertake a single research project since the war that wasn't contracted for by the military services. Vaughan wanted everything on a paid-for basis, and had decided to follow an ultra-conservative policy for the next decade. He opposed any experimentation or deviation from tried and true paths. Basing his ideas on the lean pre-war years, he was bearish for the future.

What happens now is anyone's guess, but more than one observer anticipates some merger moves within the next year. Ever since the war, mergers had been proposed by other aircraft companies.

Everyone believed there were too many aircraft companies for the available amount of business and it seemed clear that the new national defense program had barely prevented some finan-

cial calamities to happen to the industry. But how long would this new business last? Vaughan hadn't found any mergers he liked and balked especially when Secretary of the Air Force Symington had urged him to get together with Consolidated-Vultee Aircraft Corp. and a few others.

Cash-wise, C-W is the giant of the industry. With a complete change of control and an almost complete change of management, there seemed to be little doubt that things would now happen which Vaughan balked at doing for the past three years.

Shields is on good terms with the Truman administration and Symington has been anxious to re-mold the industry and cut it down to size. C-W has profitable and busy engine and propeller divisions but nothing in the way of airplanes except a mock-up and engineering studies of the CW-32 cargo airplane. A contract for 88 F-87's was canceled recently.

Sometime between now and May 1 a stockholders' meeting will be held. Much may be revealed by then, but mergers with other companies might take time. Whatever happens, it's going to be a new deal all around. Curtiss-Wright is quite a different company today than it was a few years ago—and quite different than Guy Vaughan had planned. This was one of the first but certainly not the last of the major post-war revolutions in the aircraft industry.

Support for Flight Engineers:

Operational Lessons from Berlin Lift

The air transportation industry can learn much from evaluating the operational practices developed by the Berlin air lift, according to CAB Chief Pilot Robert V. Garrett in a report covering his personal observations during a 15-day study of the shuttle operation.

Garrett was particularly impressed by "(1) the application of new methods of air traffic control; (2) the necessity for and value of flight engineers on multi-engine aircraft; (3) flight crew confidence in, and precision use of, GCA-radar landing equipment; and (4) the proof that standardized flight instrument panels made training and operational flying easier and safer."

Garrett reported, "The most significant development in the handling of air traffic on the Berlin air lift is the complete departure from accepted air traffic control methods practiced in the U. S. The stacking of aircraft in a holding traffic pattern awaiting clearance to land, as is the case in traffic control methods used in the United States, does not exist on the Berlin air lift."

The stack is eliminated by the close sequencing of airplanes with 500 feet vertical separation at 3-minute intervals. In addition to this, if an approach is missed on the first attempt, the aircraft does not attempt another approach, but returns to the airport of origin. Garrett does not indicate the number of approaches which are discontinued in this manner other than to state that it is insignificant in relation to the over-all operation.

Value of Flight Engineer. In operation of the air lift, the USAF uses three-man crews on its Douglas C-54's. Commercial airlines in the U. S. have not used the third member, a flight engineer, on DC-4 airplanes and the new crew manning regulations do not affect the DC-4. At least one overseas operator is planning the removal of flight engineers who have been used up to this time.

"The USAF requires that a flight engineer be utilized on C-54 type aircraft regardless of the length of the trip," Garrett declared. "The flight engineer controls all power settings, flap settings, and undercarriage actuations as called for by the pilot. The USAF has found that the services of a flight engineer permit the pilot to devote his undivided attention to his flight instruments, thus resulting in safer and better take-offs, approaches and landings."

Worthy of note is fact that Garrett was known to have been cool toward use of flight engineers on the DC-6 prior to his Berlin trip.

The C-54 aircraft used in the air lift are all equipped with standardized instrument panels, sequence and placement of flight and engine instruments

are alike as well as power, radio and aircraft controls.

Garrett reports that General Tunner and his staff all "agreed emphatically that cockpit standardization would further contribute to air transportation safety. I believe it pertinent to note here that U. S. carriers, and the American aircraft manufacturing industry, have been historically unable to agree on a standardized cockpit, or even a standardized flight instrument panel, for civil transport aircraft."

Possible Effects. Indications are that Garrett's report will have some immediate effects on the attitude of CAB in establishing airline operating rules.

The question of standardized cockpits is particularly applicable to the equipment interchange pattern now being developed by several carriers. In such instances, the aircraft and crew of one operator originate a flight. At some intermediate route point the plane is turned over to the crew of another carrier. Since crews are likely to fly company owned equipment part of the time and interchange equipment the balance of the time, confusion can result from differences in cockpits.

While still in Europe, Garrett was interviewed by the staff of a military publication regarding his reaction to the air lift operation. During a talk before the Institute of the Aeronautical Sciences, Gen. Kuter, commander of the Military Air Transport Services, quoted

Garrett as having said that the air lift operation had advanced air traffic control by at least 10 years.

It is entirely possible that CAB may make firm recommendations for the use of GCA at airports having the basic equipment.

Big Five Airlines Seek \$1 Surcharge on Tickets

An agreement to add a \$1 charge to every one-way ticket sold was filed with CAB by United Air Lines late last month, with concurrence from American Airlines, Eastern, TWA, and Northwest. The proposal was contingent on "similar action by other certificated carriers on competitive points."

Such a surcharge was suggested last fall at an industry conference on increasing airline revenues, as an alternative to a general fare increase.

Chances of the proposal going into effect were in doubt last week. At least one major carrier, Capital Airlines, was quick to declare its opposition, pointing out that a \$1 charge on the average Capital ticket would be equivalent to a 7% fare increase, which the company believes would have a decidedly adverse effect on traffic.

Capital said a passenger might not object to a \$1 surcharge on a Washington-Los Angeles ticket costing \$148.35, but would certainly object to paying the extra fee on a Washington-Pittsburgh fare of \$12.10.

Other short-haul carriers were reported to feel somewhat as Capital does, considerably dimming the chances of the Big 5 proposal. For each of the Big 5 has competition on several major route segments where the surcharge would react against them.



A Great Day— Delivery of the first Boeing Stratocruiser to Pan American Airways on Jan. 31 represents a major stride in the establishment of post-war standards in U. S. air transports. This is the first of 20 Stratocruisers included in the \$30,000,000 contract. Following an extensive pre-passenger service program the first airplanes will be used on flights between the West Coast and Honolulu sometime in late March. Pan Am's version of the 377 is equipped with 75 seats.

Airport Ground Travel Gets Slower as Planes Go Faster

By KEITH SAUNDERS

Only 10 of 60 major airports covered in a recent ground-travel survey conducted by the Airports Division of the American Road Builders Association are less than 20 minutes away from the business centers of the cities they serve.

And 19 of the airports were 30 minutes' driving time or more from downtown, a situation which is becoming increasingly worrisome as the airlines acquire new transports and airport-to-airport speeds are reduced.

The ARBA survey, conducted with the aid of airport and highway officials in the cities and counties involved, showed that only 13 of the 60 airports were less than five miles from the downtown business centers, while 26 were more than eight miles out. Further complicating matters was the fact that more than 20 traffic control lights are encountered on existing highways and streets linking 11 of the business centers with their principal airports, and arteries leading to 26 of the 60 airports are encumbered with 10 or more traffic lights.

Surface Slowness. The classic example of how the speed advantages of air travel are largely nullified by the slowness of surface travel to and from airports is seen in the case of a flight between Detroit and Cleveland, two large industrial areas with a substantial community of interests.

A DC-4, which is not the fastest transport in service today, travels the 105 airline miles between the two cities in 52 minutes, whereas to get from Cadillac Square in Detroit to Willow Run Airport by taxi or limousine is a 50 to 60-minute jaunt, depending on traffic conditions; ground transport from Cleveland Municipal Airport to Public Square takes a good 40 minutes. In other words, the Detroit-Cleveland air passenger spends nearly twice as long in negotiating the ground transport phase of his journey as he spends in the air.

A situation almost as bad confronts passengers on the heavily-traveled air route between San Francisco and Los Angeles. While a DC-6 takes only about two hours to cover the 345 air miles between California's two largest population centers, more than 60% as much time, or about 75 minutes, is required to travel the 27 miles between the two airports and the business centers of the two cities.

Examples as flagrant as those cited above are not numerous, but cities with airports five to ten miles and more than 30 minutes from their business centers are numerous enough to give concern to the nation's airlines and to aviation officials at the municipal, state and Federal levels.

Making the problem more acute is the fact that nearly 40% of all airline passengers, according to a CAB traffic survey, take flights of less than 300 miles, and the shorter and faster the flight the more serious the slowness of ground transport becomes.

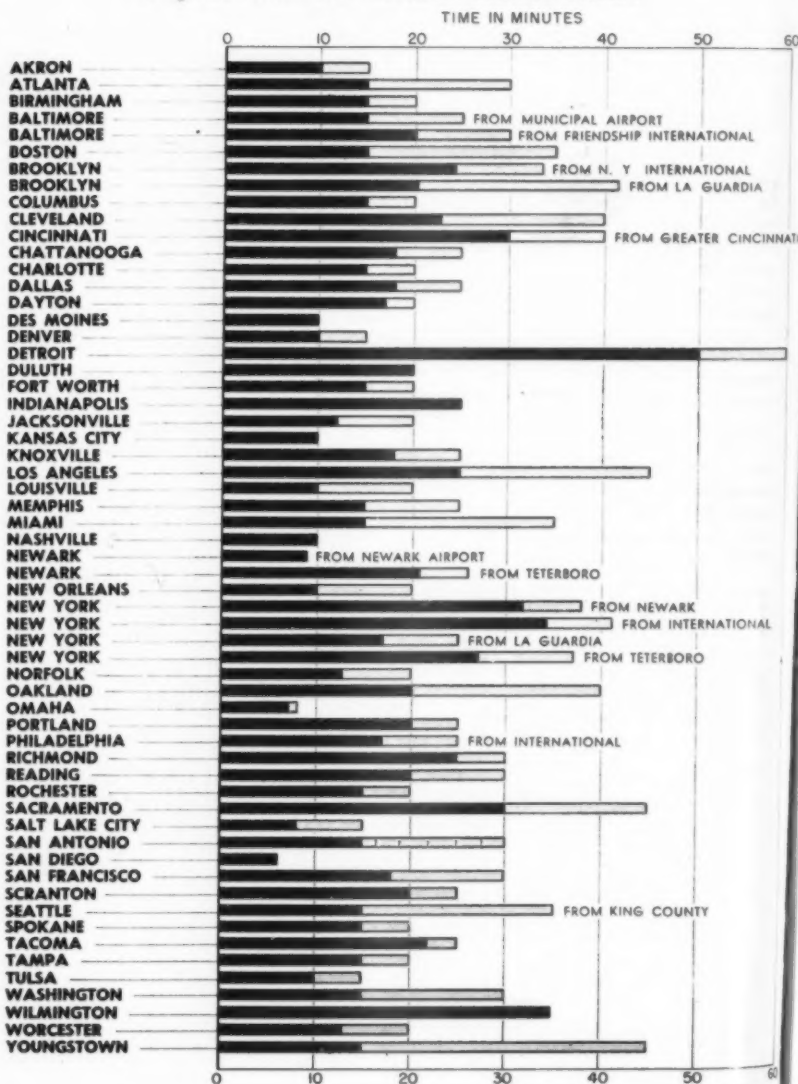
Road Builders Interest. The American Road Builders Association has a direct interest in the problem because its members stand to benefit whether cities decide to build new close-in airports or whether they decide to make

their existing airports more accessible through construction of expressways.

Not many cities can ever hope to build major air terminals close in, although Detroit may well find it advisable to build a new major airport just across the river at Windsor, Canada, within 10 minutes of Cadillac Square. But a good many cities can, and some already plan to, connect their business centers with their airports by means of expressway-type highways and streets.

Such improvements, according to the ARBA, are getting beyond the planning stage, and some city-airport expressway projects, despite their magnitude, will be completed within the next three to five years. Much will depend on the extent to which municipalities and states recognize the importance of airport-city

Airport-Business Center Travel Times



POSSIBLE REDUCTIONS in travel time between airports and business centers shown in shaded areas when limited access expressway highways and streets are completed. All travel times are based on peak traffic conditions, using data received from key officials concerned with airports or highways in the cities listed.

highways, and the extent to which funds can be obtained from the Civil Aeronautics Administration (under the Federal-aid airport act) and from the U. S. Public Roads Administration.

A noteworthy example of state-city cooperative effort in such matters is seen in the recent allocation by the State Director of Public Works in California of \$3,890,000 to assist in constructing the quarter-mile section of the Bayshore Freeway from Augusta Street to Twenty-fifth St. in San Francisco, an important link between city and airport.

Improvement Coming. Expressway projects which the ARBA is confident will be started within the next few years will cut travel time between large airports and centers of cities about one-third, on an average. In fact, a Public Works Administration appraisal of expressways vs. ordinary streets, such as those in the city portion of the Detroit-Willow Run route, indicated that an expressway will move more than five times as much traffic more than twice as fast—and with less congestion.

A major contribution of the expressways will be the elimination of many now necessary but time-consuming traffic lights. For example, about 40 such lights now in operation on motor routes between New York International Airport and downtown Brooklyn will be eliminated upon completion of the Van Wyck Expressway sometime next year.

Quite a few cities, according to W. R. McAtee, manager of ARBA's Airport Division, are anxious to make their airports more accessible and are preparing highway projects aimed at that goal.

"The situation is not so good just now, and it probably will get worse at some points before it gets better," he said, "but high-speed expressways linking big city airports with their downtown centers are bound to come."

Speed Records

Eastern Air Lines on Feb. 5 hung up a new transcontinental speed record for transport aircraft when a new-type Lockheed Constellation on a delivery flight flew from Los Angeles to La Guardia Field in 6 hrs. 17 min. and 39 sec., or about 30 min. faster than the previous record for the route. The old record of 6 hrs. 47 min. and 13 sec. was set by a United Air Lines DC-6 on Mar. 29, 1947. The latter was not a scheduled flight but did have passengers aboard, whereas the Connie had none.

Western Air Lines has claimed a new commercial airline speed record of one hour 49 minutes between Portland and San Francisco. It was set on a scheduled Convair flight which averaged 316 mph with an 80 mph tailwind. Previous record was 2 hrs. 5 min.

American Airways claimed a new commercial speed record of 10 hrs. 2 min. for a New York-London nonstop on Jan. 18. A tail wind averaging 78 mph shaved the Constellation along to the new record. Best previous time was 10 hrs. 12 min., set by American Overseas Airlines two years ago.

More RFC Aid for Airlines Urged by CAB Member Jones

Speaking as a private citizen and not as a member of the Civil Aeronautics Board, Harold A. Jones on Feb. 2 proposed that financial first aid be given to the airlines, in a speech delivered to the Air Transportation Institute of the American University in Washington, D. C.

Jones' program, which would involve a maximum of \$250,000,000, would carry the airlines through until such time as equity financing or sale of stock to private investors is again possible. The public purse would be protected, he said, in that all the proposed refinancing would be under the supervision and control of the CAB. Only alternative that Jones could see was the Bankruptcy Court.



Jones
control of the CAB. Only alternative that Jones could see was the Bankruptcy Court.

He suggested a two-point interim program consisting of (1) emergency Reconstruction Finance Corp. loans to provide working capital, to service their commercial funded debt, and to purchase new equipment, and (2) voluntary refinancing of equipment loans, preferably through RFC purchase of equipment trust certificates.

On the point of short-term financing, or emergency loans, he said the RFC has ample authority to make such loans if they are approved by the Board and if there is reasonable assurance of payment of interest and repayment of the loan. The CAB's present mail rate policy should assure RFC that any carrier granted an emergency loan would be provided with funds to pay the interest and principal of the loan.

Legislation Needed. On the subject of long-term debt, Jones suggested legislation permitting the RFC to guarantee equipment trust certificates as it did for the railroads during their period of financial troubles. These certificates would be sold to investors and the proceeds used to refinance current commercial loans now secured by equipment. The retirement term could be prolonged and sinking fund requirements made less onerous than at present.

Pending enactment of such legislation, all financially embarrassed carriers whose funded debt position is now such that it works an undue hardship on the airline and jeopardizes it financially should be permitted, Jones said, to enter into a voluntary refinancing plan with CAB approval, with the RFC refinancing outstanding equipment loans either through direct loans or through RFC purchase of equipment trust certificates.

He pointed out that sinking fund payments and interest charges on funded debt of the airlines now amount to over \$20 million annually, and said that if RFC refinancing were to reduce these charges it would reduce the amount of mail pay needed by the airlines and save the government just that amount.

"It is my belief that the airlines will continue to effect sound economies and to control expenses," he said; "and if they are permitted to take advantage of technological advantages, and if un-economic competitive situations are remedied, they will establish a record of regular earnings which will permit proper equity financing at a reasonable cost."

Until such time, Jones said, the national interest, and particularly the national security, requires that the airlines be helped out of their difficulties through some such plan as the one he outlined.

Financial Briefs

Beech Aircraft Corp. had a good 1948 fourth quarter, netting a profit of \$434,074, equal to 72c per share on 599,865 shares of stock outstanding. Net profit for the final quarter of 1947 was \$319,858, or 80c per share. Dec. 31 backlog of orders totaled \$14,729,060. . . **Piper Aircraft Corp.** reported a net loss of \$543,488, after a \$68,855 reserve provision for surplus inventory, for the fiscal year ended Sept. 30, 1948. Net sales for the year totaled \$3,687,457. Piper's loss for the previous fiscal year was \$222,727, including a \$340,500 tax carry-back.

A registration statement covering a proposed offering of 404,112 shares of **TWA** \$5 par common stock to the airline's stockholders at the rate of one-fifth of one share of new stock for each share of old has been filed with the Securities Exchange Commission. The net proceeds of the issue will be added to the general funds of TWA and used for working capital and other corporate purposes. Hughes Tool Co. has agreed to purchase 297,304 shares of the offering for investment. Merrill Lynch, Pierce, Fenner & Beane is the principal underwriter. . . A tentative unaudited financial report issued by **Mid-Continent Airlines** indicated a net loss of \$32,026 for the year 1948, as compared to a 1947 net profit of \$48,099. Reported operating revenues of \$6,668,694 for last year were 19.7% over 1947 revenues and established an all-time high.

National Airlines had a net operating profit of \$76,052 for December on operating revenues of \$1,045,079 and operating expenses of \$969,027. Net profit after charges was \$60,685. Company's passenger load factor for the month was only 43.56%, with 30,726,431 available seat miles operated and 13,383,728 passenger miles sold.

UNITED NOW OFFERS

OVERNIGHT FLIGHTS TO HAWAII WITH THE ONLY SLEEPER SERVICE



SEE YOUR TRAVEL AGENT or visit any
United ticket office for reservations.



United Air Lines now offers overnight sleeper service to Hawaii with its famous DC-6 Mainliner 300s, which are already providing the fastest, finest flights to Honolulu on daylight schedules.

DC-6 Mainliner 300s leave the East Coast at noon, Chicago in midafternoon, to make direct connections with this sleeper flight in San Francisco. You leave San Francisco in the evening, retire in complete privacy in a comfortable, full-size berth, and awake refreshed in Hawaii the next morning.

FASTEST, FINEST SERVICE

Spacious reclining seats are available in the forward compartment of the overnight DC-6 sleeper planes for those who do not wish berths. But whether you take the day or night flight... whether you occupy a berth or not, United offers the best in air travel to Hawaii: finest meals aloft... "Service in the Mainliner Manner"... stroll-about spaciousness... pressurized-cabin comfort... and the 300-mile-an-hour speed of the DC-6 Mainliner 300, which wings its way from California to Hawaii in just 9½ hours.

Attractive, low fares

Daily daylight service now.
Four overnight flights weekly—
starting March 3.

the Main Line Airway
takes you nearly everywhere

Eleven Feeders Still Inactive

The feeder airline "experiment" upon which the Civil Aeronautics Board embarked shortly after the close of World War II had become a sizeable youngster by the end of 1948, but there were indications that some of its limbs might not attain maturity before the life expectancy had been reached and passed.

As of Jan. 15, only 12 of the feederlines actually certificated had begun operations, and the temporary three-year certificates of five of these were due to expire during 1949 unless further extended, while another six were to run only until sometime in 1950. Of the entire 23 feeder certificates, six were to expire in 1949, eight in 1950, seven in 1951 and one in 1952.

With no mileage data available from Air Commuting, Inc., Yellow Cab of Cleveland, or Helicopter Air Service in the Chicago area, the certificated feeders as a group had inaugurated service over 13,789 of the 24,759 route miles they are certificated to serve. This represents only 55.7% of the certificated mileage. And of 512 certificated route points, only 221, or 43.1%, were being served.

On the surface, this doesn't appear to be too good a record, but it should be remembered that much of the territory the feeders are authorized to serve is virgin territory so far as airline service is concerned and is lacking in air navigation aids and adequate airports. Also, 11 of the feeders have not yet been able to start at all, and the mileage and route points not served by these pull down sharply the percentages of service inaugurated by the group as a whole.

The 12 operating feeders are serving 13,789 of their 15,003 certificated route miles and 221 of their 281 certificated route points, for percentages of 91.9% and 78.6%, respectively. Most of them are serving all but two or three of the certificated points on their systems.

Money Major Hurdle. Lack of financing has been and is the major problem that has plagued the feeders that have not yet been able to implement their certificates.

Roscoe Turner, president of Roscoe Turner Aeronautical Corp., certificated to serve 655 miles of routes in the Mississippi Valley area, blames "the financial fiasco of the majority of the big trunk line operators" for the delays in getting his line started. Said he:

"It makes all of the prospective money that we might interest a little fearful, because they think that if the big boys can't get along, surely the little ones haven't got a chance."

Nevertheless, he said, his financial situation has now been "corrected somewhat" and he is hopeful of beginning operations in the spring, or as soon as improvements to three airports on his routes are completed.

Frederick H. Smith, president of Island Air Ferries, Inc., MacArthur Airport, Long Island, said his company had had the finest kind of cooperation from the Civil Aeronautics Administration on its technical problems and added that "if some means can be found to get the airline industry out of the investment people's doghouse, we can be in business profitably by spring of next year."

He said Island Air Ferries had been hurt by:

The recent election and "its deadly effect on venture capital," the National Airlines dismemberment proceeding, and its effect on aviation venture capital, and "the awful burden placed upon our little company by having to wait 30 months for a route decision." He said he intended to start operations next April.

More Like EAL. Oliver L. Parks, president of Parks Air Lines, certificated to serve 2,785 route miles and 46 route points, said he hoped to commence operation of the first two route segments by April 1, and inaugurate an additional segment each 30 days thereafter until all 12 segments are in operation.

He commented: "The only real problem we have had has been financing," adding that this difficulty was caused by the heavy financial losses experienced by certain trunklines. "If we had a few more operators like Eastern Air Lines, then it would be a very simple matter."

The Yellow Cab Company of Cleveland, certificated to operate a helicopter passenger and property service in that city, reported that "we have no plans" present or in the indefinite future, for the establishment of any service in the greater Cleveland area."

Iowa Airplane Co., of Des Moines, said it is "very interested in getting into operation at the very earliest possible time because we have a large initial investment and the only way we can hope to get that back along with future expenditures is to get going and into the black as soon as possible." F. C. Anderson, president, said much work remains to be done before the company can get started and no definite date has been set for inauguration of service.

Arizona Airways is still shaping up its program, completing its organization and taking steps to acquire needed facilities and equipment but has no target date for beginning service over its 1,020 route miles.

All American Airways last month had its air mail pick-up Route 49 converted into a conventional three-year feederline certificate dating from Jan. 11, 1949. The new certificate covers some 1,858 route miles and service to 38 cities in several Middle Atlantic states. All American was planning to open the first route segment about Mar. 7 and additional segments each three weeks thereafter.

Only certificated feeders not heard from in an AMERICAN AVIATION survey were Air Commuting, Inc., Central Airlines, and E. W. Wiggins Airways. Not covered at all in the survey was Southern Airways, which to date has only been designated by CAB for certification upon meeting certain conditions, but which has not yet been issued a certificate.

Status of U. S. Feederline Operations

As of Jan. 15, 1949

Carrier	Certificated Route Mileage	Route Mileage Inaugurated	No of Cert. Route Points	Route Pts. Served	Certificate Expires
All American	1,858	.....	38	....	Jan. 11, 1952
Air Commuting	N.A.*	.....	19	....	Nov. 7, 1950
Arizona Airways	1,020	.....	20	....	June 29, 1951
Central Airlines	1,308	.....	25	....	May 14, 1950
Challenger	1,613	1,589	16	13	Mar. 30, 1950
Empire	710	709	15	14	Sept. 28, 1949
Florida	473	469	13	12	Mar. 28, 1949
Helicopter Air Serv.	.....	.....	.....	.....	.....
Iowa Airplane Co.	1,259	.....	29	....	June 24, 1951
Island Air Ferries	227	.....	13	....	Aug. 19, 1951
Los Angeles Airways	312	312	33	33	Oct. 1, 1950
Monarch	1,650	1,292	22	15	Mar. 31, 1950
Parks Air Lines	2,785	.....	46	....	Mar. 31, 1951
Piedmont	1,900	1,808	28	20	Dec. 12, 1950
Pioneer	2,181	2,175	26	25	Nov. 14, 1949
Robinson	539	458	14	8	June 28, 1951
Roscoe Turner	655	.....	15	....	Feb. 6, 1951
Southern Airways†	.....	.....	.....	.....	.....
Southwest	1,216	1,216	26	25	Nov. 22, 1949
Trans-Texas	2,039	1,992	31	22	May 14, 1950
West Coast	885	850	23	18	Nov. 22, 1949
E. W. Wiggins	643	.....	22	....	Dec. 13, 1949
Wisconsin Central	1,485	919	34	16	Oct. 3, 1950
Yellow Cab of Cleve.	N.A.*	.....	4	....	Mar. 3, 1951
Totals	24,759	13,789	512	221	

* Not available.

† Designated for a certificate but not yet certificated.

NOTE: Helicopter Air Service was only certificated Nov. 26, 1948, for mail service in Chicago area.

Marines Lead Way in Military Helicopter Use

By JAMES J. HAGGERTY, JR.

The air arm of the Marine Corps has become the champion of the helicopter, and it appears likely that most of the helicopter development and a large share of procurement for the next few years will be under Marine Corps sponsorship.

The other services, of course, make some use of the helicopter, but they have lagged in its full utilization. The Navy regards its rotary-wing craft chiefly as rescue vehicles; in the Army, helicopters are used mainly for artillery observation; in the Air Force, which is perhaps the greatest laggard of all the services, they are used only for rescue work, and very little consideration is being given at the moment to further development.

But the Marine Corps, vitally interested in the full utilization of the helicopter, has found a number of new uses for it. It became obvious to Marine officials that the helicopter's performance characteristics made it adaptable to the principal mission of the Corps—amphibious operations. So they founded Marine Helicopter Squadron One, known as HMX-1, at Quantico, Va., a little more than a year ago.

This squadron has been engaged in a complete evaluation of all of the potentialities of the helicopter. The Marine brass wanted to know what it could do as an observation plane for artillery spotting, as a troop and equipment transport in an amphibious operation and in general utility and liaison work. What they found out convinced them that the helicopter has a definite place in Marine Corp aviation.

Assault Transport? The helicopter never saw combat during World War II, but if there is another war, it probably will, as an assault transport with the Marine Corps. HMX-1 has been conducting experiments along this line and they find a number of advantages.

The Marines' transport helicopter, the Piasecki HRP-1, can carry as many as 10 fully equipped troops from a ship to the scene of action. Again, it does not have to land on a crowded beachhead under fire, but can drop at any desired place, making possible attack from a number of directions in an amphibious operation. Light artillery and other combat equipment can also be carried in the HRP.

The uses of the helicopter as an artillery spotter and as a rescue plane are well known, but HMX-1 has also used it for wire laying, communications, transportation of key personnel from one scene of action to another, and evacuation of casualties from the battle area. Improving upon their rescue techniques, they have experimented with new rescue hoists, hoisting slings, airborne litters and life rafts. Cold weather operations have also been studied.

The Marines at present have three types of rotary-wing aircraft: (1) the HRP-1, a large tandem-rotor craft, known as the "Flying Banana" unofficially and as the "Rescuer" officially. Its twin rotors are 41 ft. in diameter, and the fuselage is 48 ft. long. It is powered by one Pratt and Whitney R-1340 Wasp engine, which drives both rotors.

(2) The Sikorsky HO3S is a four-place, single four-bladed rotor helicopter, powered by a 450-hp. Pratt and Whitney R-985 Wasp Junior engine. The rotor is 48 ft. in diameter while the overall length is 57 ft. It can carry a useful load of 1250 lbs.

(3) The third Marine helicopter is the Bell HTL, a two-place craft which is used chiefly for training purposes. A Franklin O-335 engine spins its 33½ ft. rotor. The HTL, 39 ft. 8 in. long, has a gross weight of 2100 lbs. and a useful load of 612 lbs.

Navy Plane Guard. Chief use of the helicopter in the Navy is as a plane guard, hovering over aircraft carriers on take-offs and landings to pick up pilots who have been dunked.

It has been used in lesser degrees for other purposes. It is an excellent courier for ship-to-ship or ship-to-shore work. It has also assisted in the calibration of radar equipment aboard ship by serving as a stationary target for radar ranging.

Lately there has been a trend to use it for observation work, and some helicopters have been assigned to battleships and cruisers as replacements for observation planes, although as yet such work has been of an experimental nature. The Navy uses the same helicopters as the Marine Corps: the HRP, HO3S and the HTL. In addition, the Navy is now getting some new, two-place Piasecki HJS's.

Until recently, the Army depended

DC-3 Bombers Aid Greece

Not only do the Greeks have a word for everything, but they also have strange uses for a lot of things, such as using a DC-3 or C-47 aircraft as a military bomber.

It all started when the American Mission for Aid to Greece set up shop

to good advantage in combat.

"They make all of 120 mph on their bomb run," said Brooke, "which to my way of thinking is just a wee bit on the slow side, but the boys who use them over here seem to be thoroughly satisfied with them. They are now



in Athens some time ago and offered to aid the Greek government in its fight against the Markos guerrillas. The Greeks were tired of trying to fight a war with no aircraft more formidable than Harvards and Spitfires, so they asked the AMAG to supply them with some bombers. When no bombers were forthcoming, they decided to convert some of their C-47 transports to that purpose.

According to Walter A. Brooke, of Greek Airlines (TAE), several of these converted C-47's are now being used by the Greek government forces

experimenting with another one as far as conversion work is concerned and expect to have it completed very soon. It will have a bomb bay in it. This I certainly want to see."

Commented Brooke:

"The poor old DC-3. I never thought it would come to this . . . It has done everything else, though, so I guess it might just as well do a little bombing on the side."

The DC-3 bomber shown here is based at Salonika, Greece, and as you can see it can carry a pretty good bomb load.

upon specially designed planes with low stalling speeds for observation and artillery spotting. However, Army thinking now is that the helicopter may be more satisfactory, especially in the arctic, where it can be hangared more easily, is less susceptible to high winds than winged aircraft, and convenient to transport long distances by air. Accordingly, the Army has initiated a helicopter procurement program, for the present confined to the Bell YH-13 and the H-13B, a later version. The H-13 is a two-place helicopter with two two-bladed rotor 33 ft. 6 in. in diameter. Powered by a 175-hp Franklin engine, it has a top speed of about 100 mph and a range of about 200 miles. Design gross weight is 2060 lbs. and service ceiling is about 7500 ft.

Priority for Planes. The Air Force attitude toward helicopter development has been largely negative of late, although the Air Force blames this on lack of availability of funds and the priority accorded combat planes. The Air Force so far considers the helicopter only a rescue vehicle, and is paying little attention to its other potential uses. The standard Air Force helicopter is the four-place Sikorsky H-5. Powered by a 450-hp Pratt and Whitney R-985 Wasp Junior engine, the H-5 has a top speed of about 100 mph and a range of 245 miles. It is the Air Force version of the Navy and Marine HO3S.

The Air Force had planned to conduct service testing on the Kellett H-10 transport helicopter, but the 1950 budget cutback caused cancellation of those plans. The H-10 has two counter-rotating rotors, each 65 ft. in diameter. Powered by two Continental 525-hp engines, it has a maximum forward speed of better than 100 mph and a range of almost 350 miles. It is the world's heaviest helicopter, having a gross weight of 11,000 lbs.

Neither the Army nor the Marines develop or buy helicopters, such procurement being handled by the Air Force and Navy. At present the Navy is developing a new two-place helicopter, the Piasecki HJP-1, and the twin-engine utility helicopter, the McDonnell XHJH-1, which seats eleven persons. Navy helicopter procurement for the current fiscal year included 19 Sikorsky HJS's, 9 Bell HTL's and 7 Piasecki HJP's, for use by both the Navy and the Marine Corps.

Air Force developments now in progress, besides the Kellett H-10, include the Piasecki XH-16, a very large, tandem-rotor, transport-type helicopter roughly the size of a Douglas C-54, and the Hughes-General Electric XH-17, a jet-propelled "flying crane" for lifting heavy equipment. The Air Force is also developing for the Army the Bell XH-15 two-place liaison helicopter, which will have a top speed of about 100 mph.

Air Force procurement for the current fiscal year consisted in an order for 26 Sikorsky H5G's. No helicopters have been procured for the Army thus far in fiscal 1949.

Production Spotlight

70-Group Fight: The aircraft industry is carefully watching the House Armed Services Committee hearings on the controversial 70-group Air Force, for on the outcome depends the prosperity of the industry for at least the coming fiscal year. Biggest item of interest was the proposal of Rep. Carl Vinson (D., Ga.), who is chairman of the committee, to transfer \$800,000,000 earmarked for universal military training to the Air Force.

Asked how far this money would go toward the build-up to 70 groups during fiscal 1950, W. Stuart Symington, Secretary of the Air Force, replied that it would permit the maintenance of 57 combat groups throughout the fiscal year. Symington explained that the Air Force would prefer not to use such money for plane procurement alone, since that would create an unbalanced Air Force. It would be preferable, he said, to expand personnel, maintenance units and research and development accordingly. According to Symington, the \$800,000,000, if turned over to the USAF, would be spent as follows: additional planes, \$435,000,000; maintenance and operations, \$235,000,000; personnel increase, \$94,000,000; additional research and development and procurement of equipment other than aircraft, \$36,000,000.

The \$435,000,000 for plane procurement, in addition to the \$1,640,000,000 provided in the regular budget, would permit the purchase of 2,370 planes during fiscal 1950 instead of the originally authorized 1,668, a compromise highly acceptable both to the Air Force and the manufacturing industry.

Final '49 Request? The Air Force has forwarded what is probably its last purchase request for the current fiscal year to Defense Secretary Forrestal for approval. It calls for the purchase of 39 ten-engine versions of the B-36 (the six normal reciprocating engines plus four jets slung under the wing in pairs). If approved by Forrestal, the request still needs presidential approval.

New Guided Missiles: Both services have released some information on new guided missiles. The Air Force has announced that it has successfully tested two new missiles, the Convair 774 and the NATIV (North American Test Instrument Vehicle). The 774 (32 ft. long) is the largest USAF missile yet built, and will be used for testing new types of rocket power plants and for experimentation with new launching techniques, handling devices and fuels. The 13 ft. NATIV will be used for aerodynamic research, development of control systems and training of launching crews. Both will probably be procured in quantity under a new, \$26,500,000 guided missile program. The Navy released a photo, but no specifications, of its Fairchild "Lark."

Convair Notes: The Air Force has canceled Convair's contract for the XT-32 bombardier trainer, which would have been a modified version of the Convair-Liner . . . The contract for 36 T-29 navigation trainer versions of the Convair-Liner, however, is not affected . . . Convair is again flight testing the giant XC-99, transport version of the six-engine B-36 bomber, after it had been grounded for about 10 months for installation of new 10-wheel landing gear, which distributes plane's weight over a greater area on landing. Fuel for the jet engines in the 10-engine version of the B-36 will be carried in a center wing panel, which is now empty. Original plans called for utilization of the outer wing panels, but a weight and balance check vetoed the idea.

Foreign Dickering: Informed sources believe that Guy Vaughan, chairman of the board of Curtiss-Wright Corp., is dickering with the British DeHavilland Aircraft Co., Ltd., for American rights to manufacture the **Ghost jet engine**. Vaughan made a recent trip to England and our London correspondent reports that he lost no time contacting DeHavilland officials after debarking from the Queen Mary . . . Air Force headquarters denies it vehemently, but the rumor persists that **Great Britain** is negotiating for the purchase of about 150 **Boeing B-29's**. The USAF could spare some, what with 500 in storage and an additional 1,500 in "cocoon."

POW Connies: The Navy has purchased three Lockheed Constellations and named them POW-1's: P for patrol, O, the Lockheed code symbol, and W for early warning. The planes, equipped with a lot of radar, will be flying intelligence-early warning centers.

—J. J. H.

Between the Lines

By James J. Haggerty, Jr.



The Bombing Feud

Secretary of the Navy John L. Sullivan stated a while back that there was no feud between his boys and the Air Force and that the Navy was not at all interested in taking over long-range bombing, but, as we pointed out at the time, he forgot to notify some of his top brass of all this. It now appears that he also forgot to notify Fleet Admiral Chester W. Nimitz, retired, for Admiral Nimitz has squared off and fired a broadside at the pride and joy of his buddies in the Air Force, the heavy bomber, writing in a vein which suggests that perhaps the Navy does have at least a passing interest in strategic bombing, its Secretary to the contrary.

In an article in *U. S. News and World Report*, the Admiral gives his views on global warfare. The Admiral's views coincide with the old Navy party line, to wit, do away with the heavy bomber and let the aircraft carrier handle the air war. The main point of controversy is the Admiral's opinion that strategic bombing of targets 3,000 miles or more from the base of operations is not practicable, and anyway it costs too much.

Now we have the greatest respect for the Admiral as a seafaring man, but we must take issue with his air views. Why, Admiral, is 3000-mile bombing impracticable? The Admiral's reasons are a little vague—he mumbles something about inability to carry orthodox bombs in quantity and the matter of fuel consumption.

Now we think the Admiral will probably agree with us that mass strategic bombing during the Late Great Hate was fairly effective. If he will not, we could probably get a few reams of testimony from natives of such places as Ploesti, Berlin, Vienna, Breslau, Munich, Graz, and quite a few others, to override his veto. Of course, the bombers which flattened these cities didn't operate from bases 3,000 miles away. They couldn't have. However, it seems to us that if there is a bomber which can carry a bomb load equivalent to that carried by the B-17's and B-24's of the last war, and carry it 3,000 miles, then the net result would be the same. Well, we have that bomber in the Convair B-36. Whatever else may be said of the plane, it can carry a big bomb load and it can carry it 3,000 miles and well beyond. For the Admiral's information, the B-36, on a mission of 3,000

nautical miles combat radius, can carry a bomb load of 40,000 lbs.—roughly eight times as much as that carried by the B-17's and B-24's of the last war on maximum range missions.

As for the matter of fuel and expense, sure, the B-36 will burn plenty on a mission of that length—probably about 20,000 gallons per plane. But since when has expense been an item of paramount consideration in an all-out war? And how many Navy bombers, operating from carriers, would it take to carry a bomb load of that size, and what would be their aggregate fuel consumption? And finally, what about the cost of operating that floating base the Navy advocates so fiercely? What does it burn for fuel—water?

Case Against the Flat-Top

While we're on the subject of aircraft carriers, we may as well mention the opinions of the Air Force Association on the subject. The AFA is an organization composed of USAF veterans of the last war which is rapidly gaining in size and prestige. Since the regular Air Force has been directed by Forrestal's decree not to squabble with its blue-clad brethren in public, the

AFA, a quasi-official body not terribly concerned with Forrestal's directives has taken up the battle with the Navy.

The AFA doesn't think much of the aircraft carrier as a platform for bombers, and it has undertaken to tell the rest of the world why. In the current issue of the Association's official organ, *Air Force Magazine*, an article entitled "The Case Against Flat-Top" outlines AFA's views on the subject.

The article compares the Navy's carrier Task Force 58, which was engaged in strikes against Japan, with Lt. Gen. Curtis E. LeMay's 20th Air Force. On the question of expense, with which Admiral Nimitz seems vitally concerned, AFA states that the carrier task force, with 116 warships and supply and supporting vessels, represented a total investment of \$2,635,000,000, while the 20th Air Force represented an investment of \$468,000,000—roughly 18% of the monetary value of the carrier force.

Then the question of personnel is taken up. The carrier force was populated by between 90,000 and 100,000 people, all afloat in enemy waters and all subject to attack; the 20th Air Force was composed of 54,560 men, only 1837 of which were subject to attack.

In combat, Task Force 58 launched 2074 effective sorties, while the 20th Air Force flew 439, all unescorted bombing missions. The carriers lost 102 of their planes, a loss rate of 10%; the 20th Air Force lost 10 B-29's, for a loss rate of 2 1/4%.

It sums up to this: the 20th Air Force, at one-fifth its maximum war-time strength, delivered two and one-half times the bomb tonnage at less than one-fifth the total investment in money and one-half in manpower, than did the carrier force at full strength.



Navy's Skyrocket—First flight photo of the Navy's special research plane, the Douglas D-558-2 Skyrocket, designed for transonic and supersonic research. The plane uses a compound jet-rocket power plant consisting of a Westinghouse J-34 jet engine and four Reaction Motors rocket engines. In this photo the trailing smoke is from JATO (jet-assisted take-off) bottles, not the rocket engines. The Skyrocket is now undergoing flight tests at Muroc Air Force Base, Calif.

BENDIX-SCINTILLA

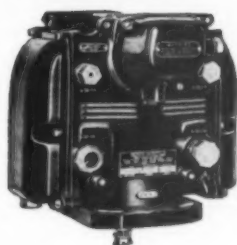
AIRCRAFT IGNITION EQUIPMENT



Ahead with the latest ignition developments
FOR 25 YEARS!



Bendix-Scintilla® Radio Interference Filters are designed for insertion in aircraft ignition grounding circuits. Extremely successful in eliminating radio noise at very high frequencies.



Bendix-Scintilla® magnetos are built for low tension, high tension and jet aircraft ignition systems. They are performance proven on planes of every type and size.



Bendix-Scintilla® Electrical Connectors are built in a wide variety of sizes and types—precision-designed to give a pressure-tight, water-tight and radio-quiet assembly.

More progress in military aviation has been achieved in this country than in any other on earth. Suppliers of functional components for military aircraft either develop with the changing picture or fail. The Scintilla Magneto Division, as foremost producer of ignition equipment for military, commercial and personal aircraft, attributes much of its own growth and achievement to the basic incentive of keeping America first in the air.

®TRADEMARK

**BENDIX
SCINTILLA**

**SCINTILLA MAGNETO DIVISION of
SIDNEY, N. Y.**



PEOPLE

ADMINISTRATIVE

H. Danforth Starr, secretary and treasurer of American Overseas Airlines, resigned Jan. 31 to become assistant to the president of the Cerro de Pasco Copper Corp. Before joining AOA, he had served as a director and assistant to the president of Northeast Airlines.

Mrs. Mary E. Croggon-Harney, widely-known Washington attorney, is now administrative assistant-legal on the executive offices staff of Transocean Air Lines, with headquarters in Oakland.

Albert C. McMenimen, Boston banker-industrialist, has been elected to the board of directors of Northeast Airlines.

R. W. Ryan, general manager for Canadian Pacific Air Lines in Winnipeg the past two years, has been moved up to the position of executive assistant to the president in Montreal. **W. G. Townley** becomes general manager of operations in Winnipeg.

OPERATIONS—MAINTENANCE—

Edgar L. Plaegar, station manager for National Airlines at Moisant International Airport, New Orleans, has been given additional duties of regional assistant superintendent of stations, a new position.

Thomas Lamar, since 1944 a junior airport manager for Pan American Airways at San Juan, Puerto Rico, has been promoted to station manager in St. Lucia, British West Indies.

C. D. Yaggy has been named manager of the newly created ground operations department of Pan American Airways' Pacific-Alaska Division.

Mrs. Ann Graham Click has been promoted to the position of chief stewardess for National Airlines, with headquarters in Miami. A former divisional chief stewardess at Jacksonville and then check stewardess, she succeeds **Helen Bowen**, resigned.



Mrs. Click

TRAFFIC & SALES

John O. Briggs, a 17-year traffic and sales veteran with American Airlines, has been appointed New England regional director of sales, with offices in Boston.

William Ortwin, district sales manager for Pan American Airways in Shanghai, has been transferred to the same post in Singapore.

Ellen Gibson has been appointed assistant publicity director for Braniff Airways. Before joining Braniff three years ago, she had served with American Airlines in Dallas.

James L. McEvoy, special properties and sales representative for American Airlines in Chicago since 1946, has been moved to Akron in the new post of sales manager there.



Heads SAS—Per Backe, former co-president of DNL, Norwegian Air Lines, on Feb. 1 became president of Scandinavian Airlines System and assumed his new duties at Stockholm. Per Norlin, former SAS head, is now president of ABA, Swedish Air Lines.

James J. Mansfield has been appointed manager of group sales for American Airlines in New York, replacing **Frank Snyder**, who returned to Air Force duty.

R. D. Campbell, formerly city traffic manager for Chicago & Southern in Shreveport, has been promoted to district traffic manager in Indianapolis.

W. E. Perrett, traffic representative in New Orleans, takes over the Shreveport post.

Frank E. Howell, formerly agency representative for TWA in San Francisco, has been made city sales manager in Oakland.

Walter H. C. Williams has been named San Francisco regional traffic representative for KLM Royal Dutch Airlines. He was with PAA for a number of years.

Dwight Chiles, traffic representative with Braniff Airways' Houston office, has been promoted to city traffic manager in Fort Worth, succeeding **J. M. Shelby**, resigned.

Jerry Griffen, formerly assistant cargo traffic manager of KLM Royal Dutch Airlines, has been named West Coast cargo representative, with headquarters in Los Angeles.

Frances Paul, who has been assistant to **Robert King**, Western district traffic manager for Air France in Los Angeles, is in charge of a second West Coast office opened by the company Jan. 15 in San Francisco.

Nelson K. Milliken, formerly district agency manager for American in Los Angeles, has been made district manager of agencies, international and interline sales in San Francisco. **G. J. De Alnza**,

formerly district agency mgr. in San Francisco, becomes agency and international sales representative in Los Angeles, specializing in development of Mexican traffic.

Others in the News

Joseph J. Mitchener, Jr., formerly associated with the Non-Certificated Air Carrier Association, is now executive secretary of the National Independent Air Carriers.

Gordon D. Leonard of Milwaukee, long prominent in Civil Air Corps activities in Wisconsin, has been named a member of the Wisconsin Aeronautics Commission to fill the vacancy caused by the death of **Karl S. Reynolds**.

Howard F. Rough, who has been with the Civil Aeronautics Administration and its predecessor organizations since 1928, has been appointed assistant to the administrator for field relations.

Philip A. Josberger, formerly southern regional manager in Miami for Air Express International and Surface Freight Corp., has been appointed regional v. p., with offices in New Orleans.

J. R. Cunningham, director of communications, UAL; **Paul Goldsborough**, general communications mgr., TWA; **W. W. Lynch**, communications supt., PAA, and **D. C. McRae**, director of communications, EAL, have been elected to the board of directors of Airborne Instruments Laboratory, Mineola, N. Y.

George T. Talbot of Oakland has been elected secretary-treasurer of the newly organized California council of the Aircraft Owners & Pilots Association.

Rex Hardy, formerly executive assistant in the sales division of Northrop Aircraft, has been named Northrop Field airport administrator.

Paul E. Hovgard, for the past 18 months general manager of Piasecki Helicopter Corp., has returned to the Glenn L. Martin Co. as project engineer for all Martin flying boat projects.

William A. Mara, director of advertising and publicity for the Bendix Aviation Corp., has been chosen to serve as chairman of Michigan Aviation Week, June 3-12.

Walter T. Bonney has resigned as director of public relations for Bell Aircraft Corp. and on Feb. 10 became an information specialist for National Advisory Committee for Aeronautics in Washington. He will be succeeded by **Francis W. Dunn** who first joined Bell in 1943.

William E. Valk, of the Curtiss-Wright Corp., was re-elected president of the Manufacturers Aircraft Association at its annual meeting in New York. Also re-elected were: **James P. Murray**, Boeing Aircraft, secretary; **Charles Kingsley**, Grumman, treasurer, and the following vice presidents: **Robert E. Gross**, Lockheed; **J. H. Kindelberger**, North American; **W. T. Piper**, Piper-Stinson; **Raycroft Walsh**, United Aircraft; **John A. Sanborn**, general manager of the association, and **Horace G. Hitchcock**, general counsel.

Aviation Calendar

Feb. 19-27—New York Airplane Show (aircraft and equipment), Grand Central Palace.

Feb. 24-25—Fourth Annual Louisiana Aviation Conference, Shreveport, Washington-Youree Hotel.

Mar. 3—SAE, Metropolitan Section, air transport meeting, Engineering Societies Bldg., New York City.

Mar. 10-12—American Society of Tool Engineers annual meeting, Pittsburgh.

Mar. 17-18—Short course in aerial spraying and dusting, Montana State College, Bozeman.

Mar. 18—I.A.S. fourth annual Flight Propulsion Meeting, Hotel Carter, Cleveland, O.

Mar. 22-24—ATA Engineering and Maintenance Conference, Continental Hotel, Kansas City.

Apr. 11-13—SAE National Aeronautic & Air Transport meeting, Hotel New Yorker, N. Y.

Apr. 22-24—Second annual Oklahoma City Air Show sponsored by Chamber of Commerce.

Apr. 25-27—American Association of Airport Executives annual meeting, Oklahoma City. (Changed from Apr. 3-6).

Apr. 28-29—I.A.S. Personal Aircraft Meeting, Hotel Allis, Wichita, Kan.

May 2-4—Airport Operators Council annual meeting, Brown Palace Hotel, Denver.

May 12-13—Instrument Society of America spring meeting, Royal York Hotel, Toronto.

May 21-27—Joint I.A.S.-Royal Aeronautical Society Conference, New York City.

June 3-12—Michigan Aviation Week, auspices Aeronautical Commission.

July 3-4—Southern California International Air Races, Long Beach.

July 20-21—I.A.S. Annual Summer Meeting, I.A.S. Bldg., Los Angeles.

International

Feb. 22—ICAO Airworthiness Division, Montreal.

Mar. 22—ICAO African-Indian Ocean meeting, London.

Apr. 19—ICAO NOTAM meeting, Montreal.

May 2—IATA Executive Committee meeting, Montreal.

May 17—IATA Technical Conference, Switzerland.

May 30—IATA Technical Committee meeting, Switzerland.

June 7—ICAO Legal Committee meeting, Montreal.

June 7—ICAO Third Assembly meeting, Montreal.

CAB CALENDAR

Feb. 15—Oral argument on proposed revision of Economic Regulation 292.1 10 a. m., Room 5042, Commerce Bldg.

Feb. 21—Hearing in Transcontinental & Western Air vs. Pan American Airways Saudi Arabian Complaint Case. (Docket 3264). 10 a. m., Room 2015, Temporary Building No. 5. Examiner Ralph L. Wiser.

Feb. 28—Oral argument in National Airlines Disembarkment Case. (Docket 3509). Tentative.

Feb. 28—Hearing on application of American Airlines and Delta Air Lines for approval (temporary) of interchange agreement. (Docket 3609). Tentative.

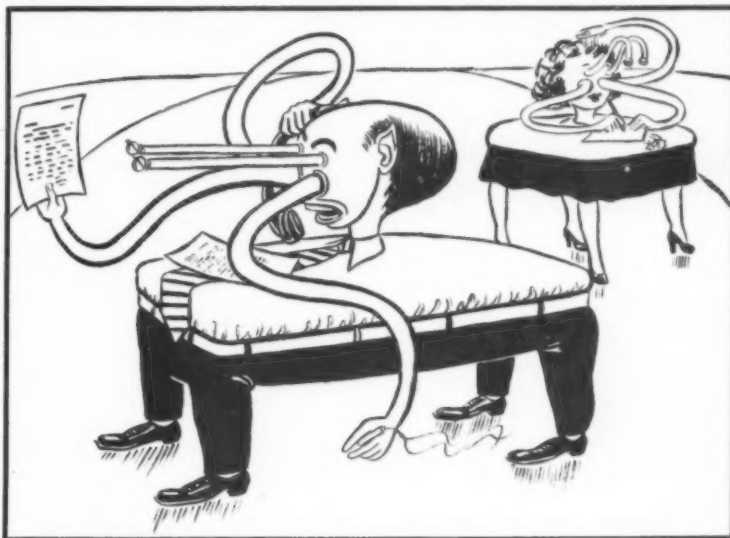
Mar. 1—Hearing in Florida Trunkline Service Case. (Docket 2215 et al.). Tentative. Examiner F. Merritt Ruhlen.

Mar. 1—Hearing on application of Chicago and Southern Air Lines for inclusion of Chicago as co-terminal on carrier's Caribbean route. (Docket 2864). 10 a. m., Room 2015, Temporary Building No. 5. Examiner Curtis C. Henderson.

Airline Commentary

By ERIC BRAMLEY

FELLOWS, we want you to read closely what Mr. Olaf Stapledon has to say. It concerns a gent by the name of Mr. Homo Jovianus, and, by golly, he could turn out to be one of your relatives. There comes across our desk every month the Journal of the British Interplanetary Society. This group is composed of learned gentlemen who discuss at some length ways and means of getting off old Mother Earth and on to some other hunk of ground. (Don't go away—this piece is connected with aviation, because you have to fly to get there, don't you?). So they called in Mr. Olaf Stapledon to give a talk on "Interplanetary Man?" (note the question mark). Mr. Stapledon (background not given) was kicking around the question of what man was going to do with the planets once he got to them. Then he said that "given sufficient biological knowledge and eugenical technique, it might be possible to breed new human types of men to people the planets." This wouldn't be too tough for Mars, he said, adding that you can start with somebody like a Tibetan, who is accustomed to cold weather. For hot old Venus,



get an Equatorial type. But, said Mr. S., when you get to the outer planets, the going gets rough. Not to be stumped, though, he has a solution, and we quote: "By very drastic eugenical operation on the existing human form, it might be possible to enable the present human brain to be supported, in spite of excessive gravitation, by throwing man into a quadruped position, greatly strengthening the four legs, and at the same time pushing the head far backwards so as to distribute its weight evenly between the fore and hind legs. But what of the problem of providing hands? The fore-limbs would be fully occupied and unavailable for manipulation. My only suggestion is that the nose might be greatly elongated into a trunk, equipped with delicate grasping instruments like fingers. It would probably be desirable to have two trunks, if not three. The eyes, by the way, would have to be projected well forward from the thrown-back brain-pan, otherwise *Homo Jovianus* would not be able to see where he was stepping." We didn't think that any story about *Homo* (after reading Mr. S.'s 10,000-word lecture, we think we know Mr. Jovianus well enough to call him *Homo*) would be complete without a picture, so we called upon our ever-reliable buddy Eldon Frye, formerly with TWA and now with Consolidated Vultee Aircraft Corp. Eldon says that after drawing *Homo* "last night I woke up trying to scratch my left hind leg with my nose. I'd suggest Olaf let some aircraft engineers design a real man, built to function more efficiently. If old *Homo* got confused he might end up like a tangle of garden hose, perfectly helpless." Note the use these people are making of their three trunks. Wouldn't that go swell on an airline ticket counter?

You've all heard about Ralph Damon being elected president of TWA, but here's a story connected with the election that you probably haven't heard. Ralph had to get to Kansas City for the board of directors meeting at which he was going to be elected president, and he was wondering how to make a reservation and pick up his ticket without letting the news out in advance. So his old friend—the lawyer, Hamilton Hale, got the reservation and ticket in his (Hale's) name. This worked fine until Ralph was at the airport ready to go and the flight was delayed. The loudspeaker was frantically paging Mr. Hale, and "Mr. Hale," not being used to the moniker, paid no attention. Finally, after a quick double-take, he rushed to the counter in time to get all the necessary information. Moral: if you travel under a pseudonym, remember your assumed name.



The Pilot... "Front Man" for Air Travel!

✂ Commercial aviation's "Front Man" is the pilot who gives his passengers a smooth, comfortable ride all the way and brings them down safely... and on time. By giving him tools that enable him to do his job better, Sperry helps him to make air travel more attractive to more and more people.

✂ Sperry provides the airline with instruments that help the pilot to *sell* passengers — and *keep them sold* — on travel by air. A main objective of Sperry research and development work today is to improve and add to these instruments... and make them

even more helpful to pilots.

✂ On many airlines today, Sperry provides the A-12 Gyropilot* for smooth level flight... the Automatic Approach Control for landings in all kinds of weather... the Gyrosyn* Compass and other flight instruments for accurate information on position and direction... the Engine Analyzer to check engine performance during

flight and to save valuable time on the ground.

✂ These and other well-known products of Sperry *decrease* pilot tension and fatigue... *increase* passenger comfort and enjoyment.

✂ Meanwhile Sperry research and engineering development go on in a continuous search for new and better aids for aviation.

*TRADEMARK REG. U. S. PAT. OFF.



SPERRY GYROSCOPE COMPANY
DIVISION OF THE SPERRY CORPORATION • GREAT NECK, N. Y.
NEW YORK • CLEVELAND • NEW ORLEANS • LOS ANGELES • SAN FRANCISCO • SEATTLE

AMERICAN AVIATION

WAL Gains Major Economy In Streamlining Shop Work

By FRED HUNTER

Western Air Lines has reduced its payroll from a high of 2,600 employees to a present work force of 1,280, in a program of retrenchment extending throughout all departments. However, effectiveness of the program is most strikingly illustrated in the streamlining of its maintenance and engineering section under Stanley Shatto, v.p. of maintenance and engineering.

This major economy was affected with the installation of Western's new engine overhaul shop, which is now in full operation. Completion of this unit brought all maintenance work under Western's own roof. Previously, much of the work, including engine overhaul, was farmed out.

With the streamlining complete, Shatto estimates Western will reduce its per seat-mile maintenance cost by 35% for the full year 1949, as compared to 1947, if there are no untoward increases in labor or material costs.

Whether this airline can escape further increases in material costs is an open question. If it has to buy additional R-2800 engines for its Convair-Liners, the new cost will be approximately \$29,000 each as compared to approximately \$23,000, this price increase having been made since Western acquired its Convair fleet last fall.

New Pay Demands. Western's contract with the CIO-United Auto Workers, bargaining agency for its mechanics, recently was opened for renegotiation. The CIO union wants more money. Its initial demands were on the startling side. These included a blanket wage increase of 25c an hour, 10c an hour additional for each license held (most mechanics have two licenses), 1c an hour additional for each year of service up to 10 years, and three-week vacations with pay. Then on top of this, the union came in with a request for a six-hour day—at eight hours pay.

Counting vacations, holidays, smoke periods and so on, the sum total of these demands would boost the journeyman mechanic pay scale for actual hours worked to well over \$4 an hour.

It is customary for unions to ask more than they expect to get favorable bargaining started. Thus it is a foregone conclusion that the union will settle for less, probably considerably less. But in view of its losses over the last two years and its unrelenting drive to effect

every economy, Western is resisting any wage increase at all. A lot of "bargaining" appears to be ahead.

Pays for Itself. Western expects to get back its capital investment in its new engine overhaul shop—approximately \$80,000—in savings achieved in its first year of operation. Stan Shatto will bet on it. And Shatto is an old hand in engine overhaul shops. This is the fourth time he has set one up.

His first experience was with U. S. Airways, which before the air mail cancellations of 1934 flew between Denver and Kansas City. Shatto set up the small shop at Kansas City where about one engine a week was overhauled with Shatto and a boy doing practically all the work. When U. S. Airways lost its mail contract and folded up, Shatto joined Pennsylvania Airlines and superintended the moving of the airline's overhaul shop to Cleveland. His third such experience was to install Continental Air Lines' shop at Denver.

The setup at Western was made to order for the installation of the engine overhaul shop. Its new Los Angeles hangar had acres of room and much of it was unused. So when Shatto mapped out 5,600 sq. ft. of space for the overhaul shop nobody missed it. Western

also had a \$500,000 stock of spare parts. Its practice had been to handle its own parts and contract only for the labor, so no additional capital investment for parts was required. It also had a number of the heavy machines, and a lively surplus market enabled Shatto to pick up bargains in work benches, parts racks and similar equipment.

About the only new piece he needed to buy was a magnaflux machine. Thus the total capital investment was only approximately \$80,000 for a completely and modernly equipped shop that would otherwise have run up to \$200,000 or more.

Homemade Tester. A sample of the Shatto ingenuity is his engine test stand. For this, Shatto scared up an old truck—residual value about \$150—and hooked up a cell on the body. The cab was transformed into a sort of caboose for the instrument panel. Total cost, approximately \$5,000.

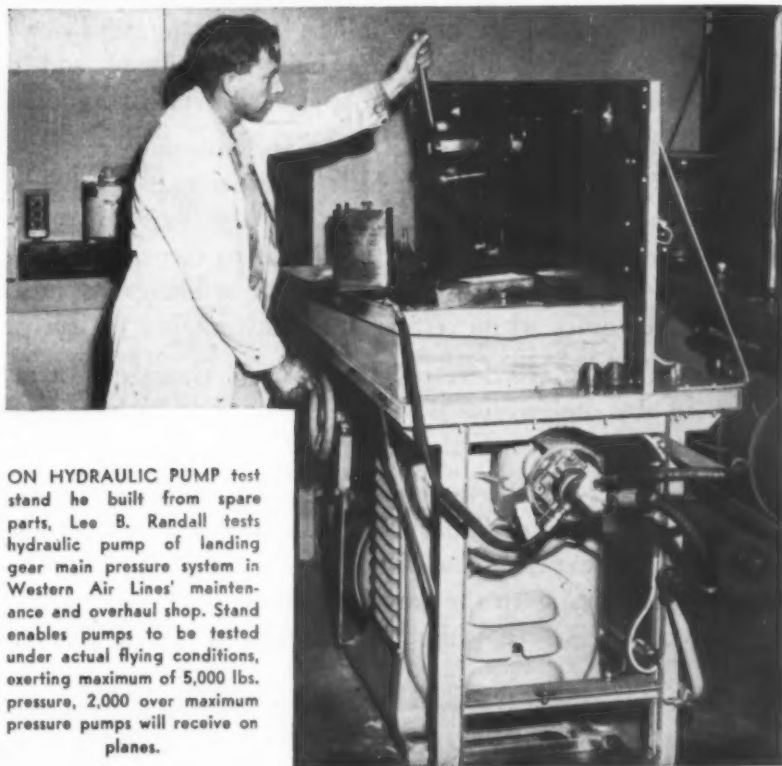
This portable test stand is driven out to a far end of the Los Angeles Airport when it comes time to test an engine. The cell is equipped for the three types of engines Western uses: Pratt & Whitney R-1830's, R-2000's and R-2800's.

Western's engine overhaul shop is now running 15 or 16 engines a month; by June will be handling an average of 20. Eighteen mechanics are assigned to the engine overhaul shop, two to the propeller shop and nine to engine installation. There are no apprentices in the engine shop. Al Jaspersen is foreman of the overhaul shop.

The engine shop began paying off on



Shatto



ON HYDRAULIC PUMP test stand he built from spare parts, Lee B. Randall tests hydraulic pump of landing gear main pressure system in Western Air Lines' maintenance and overhaul shop. Stand enables pumps to be tested under actual flying conditions, exerting maximum of 5,000 lbs. pressure, 2,000 over maximum pressure pumps will receive on planes.

WHAT'S DOING

at Pratt & Whitney Aircraft?

Frequently, people ask us, "What's doing at Pratt & Whitney Aircraft?" It is a thought-provoking question and perhaps you would be interested in some of the answers. Through messages like this we hope to share with you some of our aims, some of our problems, and some of our achievements.

As you know, Pratt & Whitney is in the business of producing horsepower and thrust. It is highly complex — this work of designing, developing, testing and producing aircraft power plants. Even long after an engine has reached the production stage, a corps of engineers is hard at work refining its design in the light of the latest knowledge and experience. Simultaneously, another group of engineers is concentrating on the engines that will be put on the production lines tomorrow.

As matters stand today, we are hard at work in three major fields. First, we are delivering the Turbo-Wasp*, the first turbo-jet engine to bear the famous Pratt & Whitney emblem. This project involves an entirely new set of problems and responsibilities, since completely new production techniques are being developed and proved. This engine is designed to power some of today's fastest fighter aircraft.

Second, we are producing and continually refining the Pratt & Whitney reciprocating engines which have become known the world over for their dependability. These engines will continue to power the long-range, load-carrying aircraft for a long time to come. A new member of this famous family — the Wasp Major-VDT — brings to it some of the advantages of turbines while retaining the advantages of the piston type.

Third, we are devoting hundreds of thousands of man-hours of engineering to the design and development of new turbine types to meet the needs of America's future airplanes, still shrouded in secrecy.

To keep all this going on smoothly, thousands of our employees are engaged in production. Other thousands are busy in our various test sections, wind tunnel experiments, flight test activities and field service branches — all contributing to the hum of activity at Pratt & Whitney, all helping to make our engines the finest that engineering skill can produce.

* "Wasp" is a registered trademark of United Aircraft Corporation

WHAT IS VDT? WHAT ARE SOME OF ITS BENEFITS?

- ☐ A piston engine?
- ☐ A turbine?
- ☐ Combination of both?
- ☐ High octane fuel?



Several months ago we announced the development of a new type engine. This is a combination of a conventional piston engine and a turbine. It is called VDT — or Variable Discharge Turbine. A highly developed form of this engine is the R-4360 Wasp Major-VDT. This power plant gives promise of adding considerably to the range of heavy bombers and strategic transports.

The first installation of the Wasp Major-VDT is in the Boeing B-54. With its four engines, this bomber will have more than 16,000 horsepower at takeoff and will show substantially improved performance.

WHAT IS THE PRESENT STATUS OF THE TURBO-WASP?

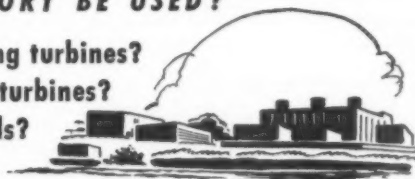
- ☐ Design stage?
- ☐ Development?
- ☐ Testing?
- ☐ Production?



In a sense the answer is — all four. The Turbo-Wasp has passed its official Navy 150-hour type test and engines are coming off the production lines. At the same time, engineers are hard at work on the same type power plant to make it more efficient, more powerful, more dependable. Already some of these engines have been delivered to Grumman for their latest shipboard fighter, the F9F Panther. The type on the production lines right now is known as the Turbo-Wasp JT-6 ("J"-jet, "T"-turbine, "6"-sixth model). This engine has the highest thrust rating of any turbine engine in production in this country.

FOR WHAT WILL THE NEW TURBINE LABORATORY BE USED?

- ☐ Producing turbines?
- ☐ Testing turbines?
- ☐ Materials?
- ☐ Fuels?



On the bank of the Connecticut River, not far from the main plant, the second unit of our new Turbine Laboratory is now more than half finished. The first unit, which has been supplementing our other test facilities, has been in operation for more than a year. Already it has proved invaluable. The new lab will be used entirely for testing turbine-type aircraft engines and their component parts. It will be one of the largest and most completely equipped laboratories of its kind in the United States. To dissipate the tremendous heat generated by the engines under test, huge pumps will draw from and return to the river 7,500,000 gallons of water every hour; nearly four times as much water as is used by the entire city of Hartford in the same period of time. The entire unit is scheduled to be in operation by September of this year. From it will come new, more powerful, more dependable aircraft power plants for the future.

WHICH OF THE NEW AIRLINERS ARE POWERED BY PRATT & WHITNEY?

- ☐ Douglas DC-6?
- ☐ Lockheed Constellation?
- ☐ Boeing Stratocruiser?
- ☐ Martin 202?
- ☐ Convair-Liner?



All but the Constellation are powered by Pratt & Whitney — the Stratocruiser by 3500 horsepower Wasp Majors and the others by 2400 horsepower Double Wasps. Virtually every airline in the world is now employing Pratt & Whitney-powered transports. In the Berlin Airlift, well over 90% of all airplanes participating — both American and British — are powered by dependable Pratt & Whitney engines.



PRATT & WHITNEY AIRCRAFT

EAST HARTFORD, CONNECTICUT

ONE OF THE FOUR DIVISIONS OF UNITED AIRCRAFT CORPORATION

OPERATIONS-MAINTENANCE

the first group of R-1830's overhauled. Average labor cost per engine on this group was \$414. Shatto expects to see this cost improved with experience.

In streamlining of the maintenance department Western reduced it down to four main sections. Tony Favero is superintendent of service and overhaul; Pete Wolf is director of communications equipment; Frank Vosepka is superintendent of inspection, and Harrison Holzapfel is engineering manager. All maintenance and engineering on the entire system funnels into these sections.

Tightening up all along the line within these four functions, total personnel was reduced from 495 at the start of 1948 to 301 at the end of the year. This payroll savings becomes much more pronounced in considering the large amount of work that formerly was farmed out, but now is done by WAL personnel.

In October, last month for which figures are available, Western recorded a 32.94% reduction in total maintenance costs as compared to the same month in 1947. This represented a dollar saving of \$64,547 for the month, despite the fact Western flew 3.44% more miles in October, 1948, than in October, 1947.

These are the comparative figures on Western's savings per airplane mile:

	1947	1948
Direct Maintenance Costs	\$.192	\$.107
Indirect Maintenance Costs	.080	.069
Total Maintenance Costs	.272	.176

Western Air Lines, which now has taken delivery of its entire fleet of 10

Convair-Liners, is preparing to retire all of its DC-4's thus enabling it to standardize on two types of equipment, the Convairs for its main schedules, DC-3's for its other runs. Direct operating costs of the Convairs has been about 72c per airplane mile as compared to an average of 83c per airplane mile for its DC-4's in 1948. Western's aim, with further operating experience, is to reduce direct operating costs of the Convairs to 60c per airplane mile.

PAA Leases WAL Hangar

Pan American Airways will move its base of operations at the Los Angeles Airport across the field in a lease arrangement with Western Air Lines, it was disclosed with an announcement by North American Aviation that it is taking over the present Pan American hangar and ramp areas.

PAA will occupy approximately 26,000 sq. ft. of office and nose hangar space in WAL's hangar at the airport and also about 4,000 sq. ft. of space now occupied by WAL in the passenger terminal building. In addition, PAA plans to add about 2,000 sq. ft. of new construction to the terminal building for customs and immigration quarters.

The move will put Pan American on the north side of the field along with all of the other scheduled airlines at the Los Angeles Airport. At present, connecting passengers from domestic carriers have to be transported around to PAA's terminal on south side.

SAFETY SLANTS

THE NATIONAL Safety Council warns that the disposal of fluorescent lamp tubes may introduce a health hazard. Beryllium compounds used as tube coatings can be inhaled when they are broken, or cuts from broken tubes may introduce beryllium into the blood stream. Also, mercury vapor might be inhaled. NSC recommends extreme caution in disposing of used tubes, suggests placing the tubes in a weighted burlap bag, immersing the bag in water, and breaking the tube with a heavy object such as a pipe or crowbar. The unopened bag is then thrown out. Cuts from fluorescent tubes should be brought to attention of a doctor immediately.

In a three-month period, from Sept. 29 thru Dec. 31, there were 12 cases reported in which ice accumulation in aircraft tail sections caused malfunctioning of controls. Seven of these were in the DC-6, 2 in the DC-4, 2 in the Martin 2-0-2, and 1 in the Convair Liner.

Pan American Airways recently experienced a crack in the nose wheel fork of a DC-4 nose gear at the axle. The crack was a vertical break about three inches long. Douglas Aircraft Co. indicates that the nose wheel fork and axle cap are made as one assembly and only after machining is the axle opening bored. After the caps are separated from the main fork, both the caps are coded to the proper leg of the fork and to identify the forward and rear portion. This is accomplished by letters (M, N, etc.) stamped on the fork and cap. It is only necessary to match the letters to insure proper correlation. Unless the caps are matched to the fork, the attaching bolts are apt to cause undue loads and cracks can occur.

From time to time various airlines have experienced trouble with American LaFrance fire extinguisher operating heads when the wrong length screws were used to secure the instruction plate on the control head. When the longer screws are used they strike the sheave (pulley) that drives the cutter assembly and prevent its normal operation. Number 4, 5/32-inch screws are normally used in securing the identification plate. Longer screws will make the unit inoperative.

Most of the airlines have set up provisions for filling aircraft oxygen bottles. The need for thorough training of personnel authorized to operate the equipment and incorporation of safety features in the basic transfer system are emphasized by the loss of two lives by one airline during this type of servicing. Contributing factors were listed as the lack of a reducing valve at the high pressure cylinder outlet, no safety valve on the low pressure side, use of low pressure fittings and use of an improper pressure gauge on the walk-around bottle being filled.



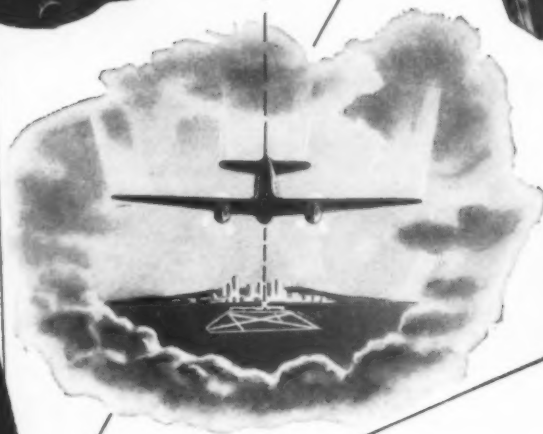
On the Record— The simplicity of the General Electric flight recorder mechanism is shown in this picture of a B-29 installation where it is used to record air roughness, altitude, plus operation of automatic pilot and de-icing equipment. The chart paper is carried on a simple carriage that is easily removed, serviced and reinstalled. The recording box and sensing heads can be located anywhere in the airplane since the system features remote indicating circuits. A number of commercial airlines are procuring GE flight recorders for testing under an organized ATA program.



by
pass



Gyro Flux Gate*
Compass System



Dual Radio and Magnetic
Compass Indicator

IT'S ALWAYS PRECISION NAVIGATION WHEN PIONEER* POINTS THE WAY

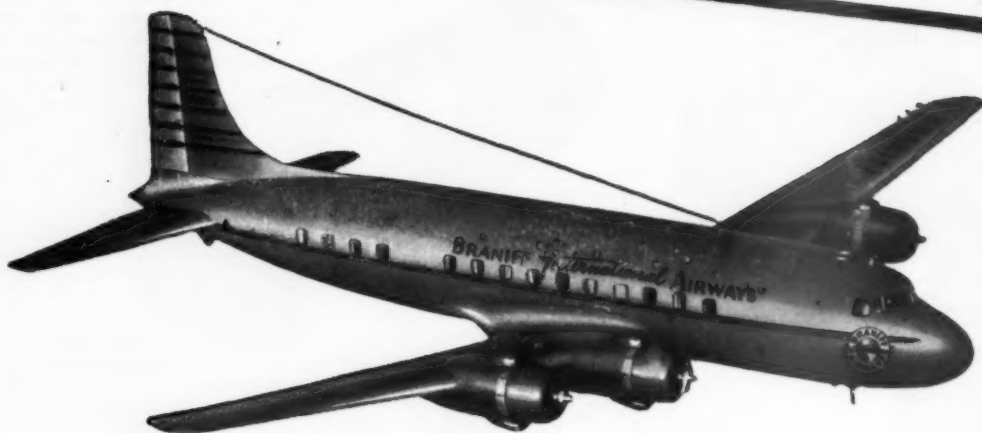
The crisp precision of Eclipse-Pioneer navigation instruments has become a byword with the men who rely on them every day. For, all Eclipse-Pioneer aircraft equipment is built to the same high standards of quality and dependability that have made the name famous. The care and specialized craftsmanship that earned this priceless reputation have been developed through years of experience, dating from the earliest days of aviation history. Now, Eclipse-Pioneer stands as one of the foremost producers of fine instruments and accessories for the aircraft industry. Whether your problems involve research, production or performance, you can be sure you have chosen well when you let Eclipse-Pioneer point the way.

*REG. U. S. PAT. OFF.

Bendix
AVIATION CORPORATION



Expert Sales: Bendix International Division, 72 Fifth Avenue, New York 11, New York



WILCOX

FIRST CHOICE OF

BRANIFF *International* AIRWAYS

BRANIFF EQUIPS GROUND STATIONS WITH WILCOX TYPE 364A TRANSMITTER

DESIGN SIMPLIFIES SERVICE

Conventional circuit design, fewer numbers and types of tubes, plus open mechanical construction simplify tube stocking problems and speed maintenance. The entire transmitter portion of the Type 364A is built on a drawer-type chassis, instantly withdrawable from the front of the panel.

RELAY RACK MOUNTING SAVES SPACE

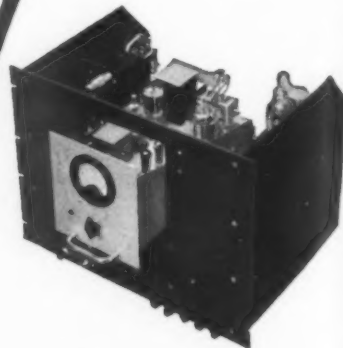
Compact design requires only 15 inches of rack space for installation, frequently utilizing space already available.

.005% FREQUENCY STABILITY WITHOUT TEMPERATURE CONTROL

Through the use of a newly developed crystal, troublesome thermostatic temperature controls and crystal ovens are no longer necessary to provide adequate frequency stability.

SIMPLIFIED CONTROL FOR REMOTE LOCATION

Modulation over a single telephone pair and carrier control by means of a simplex circuit allow the transmitter to be readily located at a remote point.



WILCOX
Type 364A Transmitter
118-136 MC. Band

WILCOX
ELECTRIC COMPANY
KANSAS CITY 1, MISSOURI



Write Today... for
Complete Information

New Proximity Indicator Offers Collision Protection

By WILLIAM D. PERREAULT

On Jan. 30 a Pan American Airways' Constellation was climbing shortly after take-off from LaGuardia field when it experienced a collision with a privately operated Cessna Model 140. The Constellation had then reached an altitude between 3000 and 3500 feet, was east-bound, flying away from the sun. The Cessna struck the top of the Constellation with the right wheel contacting first in line with No. 3 propeller. The Cessna was demolished, the transport was badly damaged, and the newspapers and radio played up another "air tragedy."

The modern transport airplane has notoriously poor visibility, according to studies now being made by CAA at Indianapolis. The studies are not complete but panoramic photos taken in transport cockpits prove the limited visibility experienced by pilots. The situation, CAA claims, is further complicated by the variations in speeds among present day aircraft. For instance, when one DC-3 is flying level and another is climbing directly below, the speed differentials of the two planes prevent possible collision, although there are blind spots for both pilots. With a DC-3 flying level and a Convair-Liner climbing directly below, this relation does not exist. There are mutual blind spots and speed differentials make collision possible.

Many devices have been discussed to provide adequate warning of impending collisions. Airborne radar stands out as the most outstanding possibility, but the expense, weight, and developmental period still ahead make it prohibitive.

New Proximity Indicator. Charles Adler, lighting engineer-inventor of Baltimore, has designed an electronic system known as an aircraft proximity indicator. This device features two cockpit lamps labeled "left" and "right." When an aircraft appears within the range of the system, and to the right of the airplane in concern, the right lamp provides a bright signal. The pilot turns to the left.

When the left light is brighter than the right, the pilot knows there is a ship to his left and makes a right turn. When a ship is directly ahead, both lights show equal intensity and the pilot makes a right turn. These are the only signals which the pilot must remember.

It should be emphasized that complete protection is dependent upon all aircraft being equipped with the proximity indicator, since the system receivers work on signals from other aircraft and not on the principles used in radar sets.

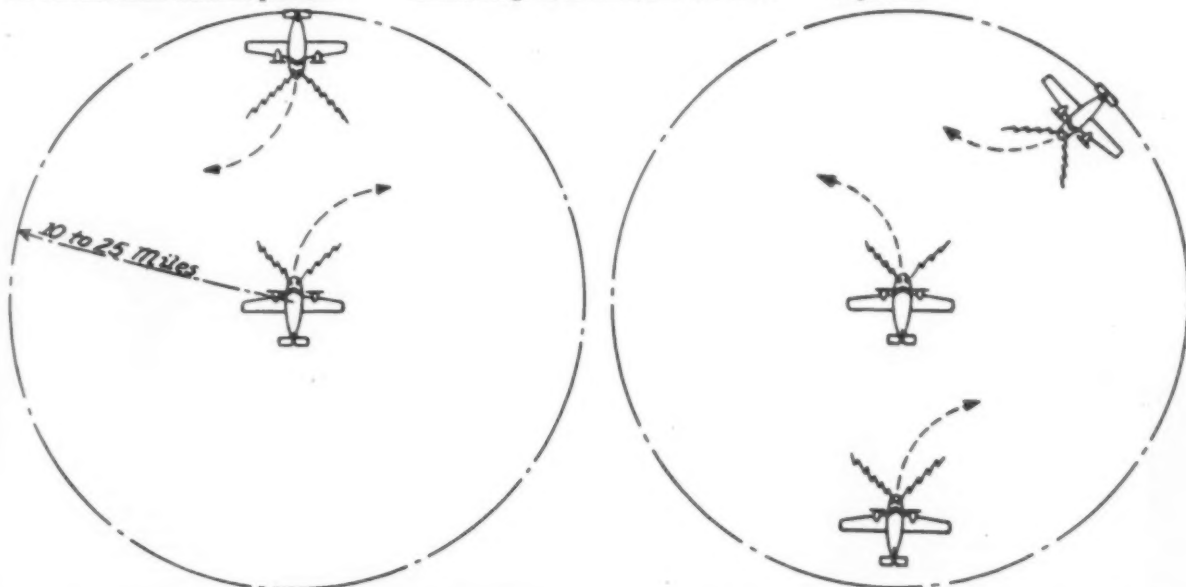
In operation, the system proposed by Adler features a micro-wave, or ultra high frequency transmitter having a limited range of 25 miles, and two micro-

wave receivers. Signals from the transmitter use an omni-directional antenna mounted on the top or bottom of the fuselage. As each impulse is transmitted the aircraft's receivers are momentarily disconnected so that they will not receive these signals.

Electro-magnetic horn antennae on each side of the aircraft pick up the signals from other aircraft that are used to sense impending danger. The design and mounting of these antennae control the directivity which would probably be limited to a vertical range of 20 degrees and a horizontal range of 60 degrees. Within this range the size of the antennae can be kept small and provisions made for mounting them flush with the fuselage, minimizing drag.

American, Capital Interested. Vertical polarization of the beams is insured by flaring the antennae horns in both dimensions. The resolution of the system is such that the pilot will know whether other aircraft in the zone are dead ahead, to the right, or to the left. The combined features will prevent reception from airplanes flying well above or below the altitude in concern.

Adler has applied for patents covering the proximity indicator system, but no provisions have been made for the manufacture of the units. The component parts are all standard communications items which should be available in a short time when the demand calls for production. Meanwhile Adler is working with several of the airlines including American and Capital, both of which have shown interest in the development.



Sensing Danger—In these diagrams illustrating application of the aircraft proximity indicator, the aircraft movement necessary to avert a collision is indicated by the arrows. Signals transmitted from other equipped aircraft are picked up by antennae on the aircraft and used to control signal lamps in the cockpit. An aural warning signal could also

be used with the system. In the sketch on left the airplanes are directly in line with one another, and both cockpit signals light and both aircraft turn to the right. In the second sketch, three airplanes are shown with respective actions indicating that multiple aircraft congestion can be handled. Installation would compare in weight and cost to lightplane communications equipment.

BRIGHT-CLEAN-EFFICIENT



CHICAGO AND SOUTHERN USES CEE-BEE "Improved A-3"

The DC-3's and DC-4's flown by Chicago and Southern Air Lines are always bright, clean and efficient in appearance; among the finest in the country. They are maintained economically with Cee-Bee A-3, and Alomaloy A. For the past 18 months C & S has been an enthusiastic user of Cee-Bee products. Like other users they have found the reduced labor cost and the improved appearance of their aircraft are important economic factors.

Research Director R. L. Anderson writes, "The use of Cee-Bee Bright-Cleaning methods has enabled us to reduce our labor costs involved in ship cleaning, approximately 20 percent over our former methods." And, in another letter—"We have tested . . . other products . . . Cee-Bee products gave better results. Cee-Bee people always give us better technical service . . . ahead of the field by several steps."

Chicago and Southern surface cleans their DC-3's in 10 man hours; their DC-4's in as little as 15 man hours, using Cee-Bee A-3, and Alomaloy A.

Like Chicago and Southern, and many other operators, you will find Cee-Bee Bright-Cleaning methods bring important savings—and cleaner airplanes.

Write today for further information. See just how Cee-Bee's economical methods can be applied to surface cleaning your aircraft.

AIR FORCE IS NOW USING CEE-BEE A-3

for brightening all M.A.T.S. Aircraft. The Air Force realizes that proper brightening is an important factor in protecting exterior airplane surfaces.

CEE-BEE CHEMICAL CO., INC.
AVIATION DIVISION
655 E. GAGE AVE. • LOS ANGELES 1, CALIF.

OPERATIONS-MAINTENANCE



Cutting Clouds—The pattern in these dense clouds was cut by seeding small quantities of dry ice into clouds containing supercooled water droplets. The chain reaction that follows seeding causes precipitation and dispersal of the cloud formation. Project Cirrus, a joint operation of the Signal Corps, the Navy and Air Force in consultation with the General Electric Laboratories, conducted 35 flights in which positive indications of cloud modification were obtained. Irving Langmuir, associate director of the General Electric Research Laboratory, described the activities of Project Cirrus in a paper presented at the annual meeting of the Institute of the Aeronautical Sciences.

MODIFICATION

Lockheed Aircraft Service, Inc. has been awarded a \$1,220,000 contract for overhaul of 19 R5D transports and 2280 flight instruments. Schedules call for delivery of two overhauled aircraft per month starting in April and extending through Feb. 1950 . . . To meet the increased traffic over its Vancouver-Victoria-Seattle route, **Trans-Canada Air Lines** is modifying three DC-3's to provide 28 seats, an increase of 7 . . . **Aviation Maintenance Corp.** has been awarded a \$940,000 Air Materiel Command contract for reconditioning 47 C-47's which have been in storage at Tucson, Ark. Work will be done at Van Nuys, Calif.

Air France has contracted with Lockheed Aircraft Service for the 8,000 hour overhaul of two, and inspection of three, DC-4's. Schedule calls for delivery within 77 days . . . **Curtiss-Wright Corp.** has been awarded a \$3,000,000 contract for the reconditioning of 100 Curtiss C-46 transports. Program will be completed at the Columbus, Ohio plant . . . **AiResearch Aviation Service Co.** of Los Angeles has delivered a DC-3 executive transport to Humble Oil Co. of Texas after complete overhauling and refinishing the interior with plush accommodations.

Transocean Air Lines has purchased controlling interest in the Oakland Aircraft Engine Service. The company will continue to operate as a separate corporation using the 14,000 square feet of shop space rented at Oakland Airport.

ENGINEERS

Expanding Engineering Department of North American Aviation, Inc., needs qualified

Aerodynamicists

Thermodynamicists

Stress Analysts

Aircraft Designers

and specialists in all phases of aircraft engineering, for work on military projects. Please include summary of experience in reply.



Engineering Personnel Office

North American Aviation, Inc.

LOS ANGELES AIRPORT
Los Angeles 45, Calif.

LAA Helicopter Damaged

Los Angeles Airways recently experienced its first accident in operation of its helicopter mail routes. The helicopter failed in an attempted take-off from the Terminal Annex postoffice in Los Angeles. The heavily loaded S-51 fell into the street damaging the craft and killing the pilot. Observers said that the S-51 fell off to the right immediately after take-off and the rotors struck the roof.

Investigators are checking the possibility that the helicopter was overloaded but official findings have not been released at this time.

BOAC Sells Flying Boats

British Overseas Airways Corp. has contracted for the sale of 12 of the Hythe flying boat fleet to Aquila Airways of London and Southampton. These are the 30-ton, double-decked flying boats built by Short Brothers and Harland Ltd. and used by BOAC between Britain, Africa, India and Australia since end of the war. Three of the Hythes that were delivered to Aquila Airways earlier were used on the Berlin air lift between Hamburg and Havel Lake, Berlin, until ice stopped flying boat operations in December.

Among the Suppliers

Luis de Florez, internationally known engineer and synthetic training authority, is now working with Link Aviation, Inc. in developing the world's first jet trainer for the Air Force. Rear Admiral de Florez has made major contributions to the field of synthetic trainers particularly in his work with the U. S. Navy's Special Devices Center.

Fred Kreuger, supervisor of aircraft distributor sales for the **Bendix Products Division**, Bendix Aviation Corp., has been appointed director of the Aviation Distributors and Manufacturers Association . . . **Durham Aircraft Service, Inc.**, Woodside, New York, has been appointed a distributor for **Whiz Aviation Chemicals**, a product of the **R. M. Hollingshead Corp.** . . . **Aircraft Engine and Parts Corp.** has opened executive and general offices at 345 Madison Avenue at 44th St., NYC. . . **The Skinner Purifier Division** of Bendix Aviation Corp. has appointed **Kenneth G. Gano** as sales manager . . .



Kreuger

Newman L. Smith has been named president of **Airquipment Co.**, a subsidiary of **Lockheed Aircraft Corp.** **Airquipment Co.** recently acquired control of **Aerol Co. Inc.** Smith will head the activities of the combined companies. **Jack C. Newburn**, supt. of the Constellation assembly division of **Lockheed**, will become v.p. and general manager of **Airquipment**.

FEBRUARY 15, 1949

Extra Section

By William D. Perreault



WANT to be a mule? That's the theme of a small sign in United Air Lines' operations office at La Guardia Field. The catch line is followed up by the comment that the airplanes will never fly if each crew looks for the perfect airplane in a flight on an ideal schedule. It's a good thought.

Ralph Damon's comments on "What the Airlines Want in Navigation Aids" before the annual meeting of Institute of the Aeronautical Sciences were effective and interesting. Explaining that his comments were personal opinion ("As an employe of a large airline for a number of years, it is inevitable that I should have formed certain opinions . . ."). Damon emphasized that the thoughts were not binding on "my ex or next employer," nor on the ANDB of which he is director. The system should feature "safety, efficiency, security, and speed of accomplishment." Damon lauded the RTCA target and interim systems but added ". . . To the airlines, this is a seriously slow program."

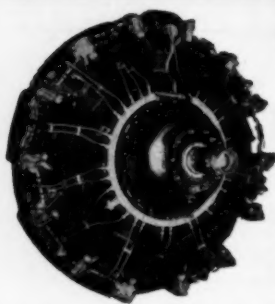
How about Vernon Taylor's air operated emergency exits for transport airplanes? Interest ran high for a while. CAA's Aviation Safety Release underlines the need for a more effective means of identifying the location of exits and simplifying the means of operation. Taylor's design makes use of an air operated system which the pilot controls and which would automatically open the exits at the crucial moment. There appears to be no good reason why the system could not be made to operate on impact in the same manner as some of the recent emergency flash light mechanisms. With the swing to air brake provisions on transports (including the Super DC-3), a single bottle might be used to power brakes or exits at the pilot's discretion. The possibilities seem great, the action slow.

The paper on the **Sperry Zero Reader** at the IAS meeting promoted more interest than any of the individual reports. Prepared by S. Kellogg and C. F. Fragola of Sperry, the paper outlined the advantages of the Zero Reader as an in-flight and landing aid. No other instrument has so captured the imagination of private and transport pilots in some time. AOPA indicates that members are writing in with the cash in hand attitude of "where can I get one?"

The rotating shifts for airline maintenance crews is a rough program. There was a time when 24-hour coverage was provided by crews on permanent assignments on one of the three shifts. Generally there were enough people with interests which fitted each schedule so that the bulk of working hours was taken care of with no hardship. This factor, plus the wage incentives provided in shift differentials in recent years, would seem to indicate that rotating shifts are no longer a necessary evil. Yet, they continue in use.

According to the **Mechanic's News**, a publication of the IAM members at Capital Airlines, Capital "is paying the highest known rates in the world for comparable work," although 33 months ago wages there were the "lowest rates among the major carriers." The News cites the fact that 75% of the men are in top brackets compared with 41% in the next highest line, at least 50 mechanics on the system have doubled their rates during the period and "no mechanic has received less than \$2.74 per day increase." Quite a record!

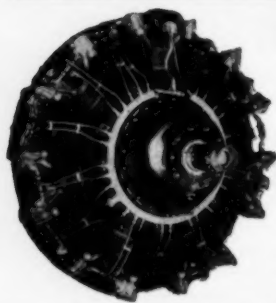
The Fuller Brush man has visited American Airlines and unloaded some oversize "bottle brushes." It seems that trouble with the Convair-Liner exhaust augmentor tubes is caused by carbon particles sticking to the sidewalls. The exhaust gases keep these spots glowing hot and eventually the spot burns through. Now American is using this long handle Fuller Brush which is squeezed into the open end of the augmentor tube and makes a clean sweep of the entire tube surface. Augmentor cleaning has been set up periodically with the regular inspections.



R1830-92

150

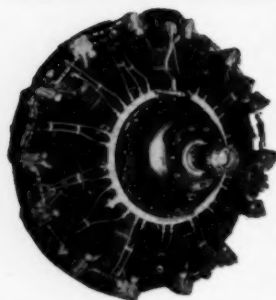
MAJOR OVERHAULED to meet
AIR CARRIER requirements by au-
thorized PRATT & WHITNEY
Agency; low time first run, known
history; each \$3500.00



**R985-AN-1,
AN-3**

250

MAJOR OVERHAULED by
P. & W. approved agency.
\$1950.00

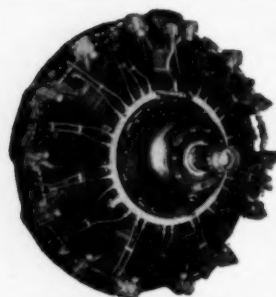


R1830-43-65

(Converted to 1830-92)

250

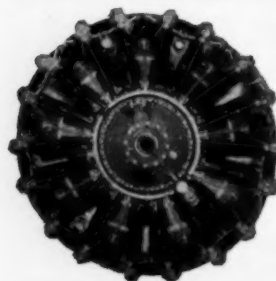
MAJOR OVERHAUL (military)
first run (average total time
300.00 hours) with zero time since
conversion to R1830-92 specifica-
tion by recognized agency, block
tested C.A.A. Form 337, war-
ranted; each \$2000.00



R1830-43-65

250

MAJOR OVERHAULED (military)
average total time 300.00 hours,
free from rust or corrosion, origi-
nal logs, C.A.A. Form 337 sup-
plied; each \$675.00



R1340-AN1

100 NEW

NEW (unused) P & W Engines,
each \$3750.00

Special Offering

PRATT & WHITNEY ENGINES

The Pratt & Whitney engines illus-
trated here are offered "Subject to
Prior Sale," packed and inhibited for
indeterminate long time storage,
complete with records backed by a
world wide organization with more
than TWENTY years of experience.

All prices are quoted F.O.B. Glendale, California

OTHER MISCELLANEOUS ENGINES AVAILABLE

P & W R2800-79, -77, -75, -65, -59, -57,
-43, -31, -21

P & W R1830-94, -88, -75, -53

P & W R985-50, -25 -AN14, -AN12, -AN6,
-AN3, -AN1

WRIGHT R2600-29, -13, -8

WRIGHT R1820-87, -60, -56, -42, -40

LYCOMING - JACOBS - RANGER -
CONTINENTAL

Our Inventory Pratt & Whitney Parts
at Government Acquisition cost - \$30,000,000.00

P & W, Wright, Allison and Packard
Tools - \$2,500,000.00

AGENTS WAR ASSETS ADMINISTRATION

THE BABB CO., INC.



GRAND CENTRAL AIRPORT
1007 AIRWAY - GLENDALE, CALIFORNIA, U.S.A.

These Aircraft Available

These aircraft are now available for immediate delivery. They may be converted to your own specification or may be purchased "as is." They are ideal for airline, cargo or executive use.

OTHER AIRCRAFT AVAILABLE (prices and information on request)

B-24J — 274 total hours.
Curtiss C-46F — 350:00 total hours
Lockheeds — Lodestars — Electras — Twelves
Beechcrafts — Bi-planes and Bi-motors
Boeings — 247Ds
Stinson — SR-10Es — Douglas C-54Bs with E conversion — Consolidated B-24s, LB-30s — Lockheed P-38s

AIRFRAME SPARES

\$1,000,000 WAR ASSET INVENTORY NEW C-47, DC-3, C-54 SPARES. WRITE FOR CATALOG. Other spares for No. American AT-6; AT-16; B-25; C-46; PBV; Lockheeds (all series); PT-26.

ENGINES • PROPELLERS • ELECTRICAL • HARDWARE

ALL AIRCRAFT SHOWN SUBJECT TO PRIOR SALE

♦ U. S. EXPORT LICENSE # 124

AGENTS WAR ASSETS ADMINISTRATION

THE BABB CO., INC.



GRAND CENTRAL AIRPORT • 1007 AIRWAY • GLENDALE, CALIFORNIA, U. S. A.

NEW YORK OFFICE:
444 Madison Avenue
New York 22, N. Y.

WASHINGTON, D. C. OFFICE:
Dupont Circle Building
1346 Connecticut Ave., NW
Washington, D. C.

CANADIAN OFFICE:
Trans-Atlantic Bldg.
Montreal Airport
Dorval, Quebec, Canada

HOLLAND OFFICE:
Schiphol Airport
Amsterdam, Holland

SWITZERLAND OFFICE:
9-11 Place de la Fusterie
Geneva, Switzerland

HONOLULU OFFICE:
2963 Kalakaua Avenue
Honolulu, T. H.

PBY's



17 PBY's—Your choice \$10,000.00
 40 PBY-SA's—Your choice \$15,000.00
 Low total time, some with nearly new or zero time engines

C-47A's and B's



Low total time; NC licensed. Excellent, clean condition, 24 Volt
 Several to choose from \$25,000 and up.

A-26B's

NL-67943



Less than 10:00 hours total time. NEW R2800-79 engines
 All NEW modifications; spotless condition. 300 plus MPH cruising speed,
 long range. \$55,000.00 each

B-25J's

NL-68777
 NL-66548



343:00 total hours—\$17,500.00
 152:00 total hours—\$47,500.00
 NL-66548 has deluxe interior

and in spotless condition

PT-26's (Cornells)



200 HP Rangers. Complete stock of Air Frame and Engine spares
 120 aircraft to choose from
 Prices: \$750.00 to \$2000.00

NEW PRODUCTS

Multi-Purpose 'Aerotruker'

Aerol Co., Inc., 2820 Ontario St., Burbank, Calif., has introduced a heavy duty, cast-single-unit frame,



multi-purpose hand truck adaptable for airline use. Known as the Aerotruker, the new unit features rubber cushioned wheels rolling on Timken tapered roller bearings which are factory packed with lubricant and require no servicing during their life. The well balanced Aerotruker is lightweight, corrosion resistant, rust proof and can be made

spark proof. Maintenance on the cart is minimized by the single unit frame leaving no bolts, straps, nails, screws, etc. to be maintained. The solid rubber tires are guaranteed not to separate from the wheel core and the rubber tread is said to be oil and water resistant.

Cockpit Actuator

Hoover Electric Co., 2100 Stoner Ave., West Los Angeles, has designed an actuator for use in the North American F-86 which might well be adopted to other aircraft uses. The unit incorporates an explosion proof, 1/2 hp motor spur gear reduction, torque limiting clutch, bevel gear transmission and quick connector plug, and is rated for 25 inches torque at 850 rpm with a maximum transmitted torque of 120-inch pounds plus or minus 15%. The clutch operates by a direct pressure measuring device and is meant for repeated operation, since it slips once in each cycle, insuring the predetermined closing pressure

on the unit actuated. In the F-86 application the actuator will open or close the cockpit canopy within 5 seconds at high flight speeds. The clutch mechanism has been operated over 5000 times with a maximum variation in torque of -15% and the design makes it unnecessary to adjust the mechanism during the service life.

Non-Recoil Hammer

Drake Industries Ltd., 681-683 E. Hastings St., Vancouver, B. C., is marketing a 1-pound "Tahlen" hammer with tenite tips measuring 1 1/2 inches in diameter



for use in applications where metal hammers are not desirable. The hollow metal head of the hammer contains a charge of steel grit which falls as the hammer is lowered, practically eliminating recoil after it has struck. This reduces shock to the wrist and arm, and, according to manufacturer, results in 30% harder blows.

Test Chamber

AiResearch Aviation Service Co., 5907 Imperial Highway, Los Angeles 45, Calif., has developed a 3x5-foot test chamber for field test and calibration of aircraft cabin pressure instruments. Until development of this atmosphere

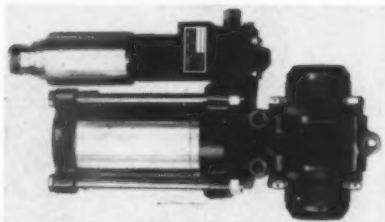
chamber, it has been the practice of airlines to return all units to the manufacturer for testing.

Special electronic controls simulate flight patterns in the test unit while manometer tubes on a control panel indicate atmospheric pressure, cabin pressure and differential pressure between the two. Only additional equipment required is a vacuum pump and a 110 or 220 volt electrical power supply.

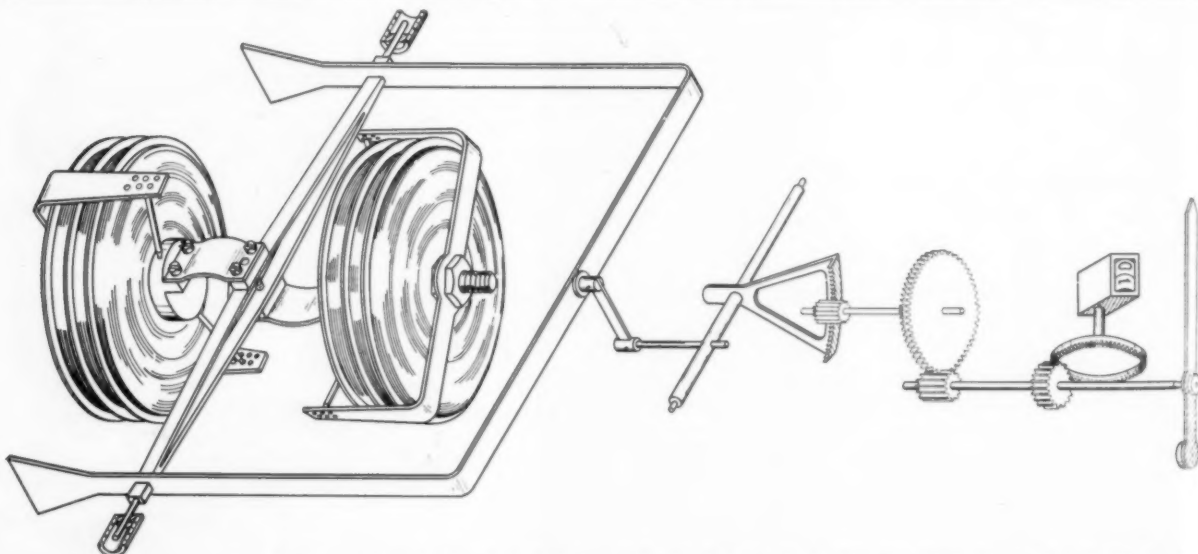
Electrical Gate Valve

Hydro-Aire, Inc., 3000 Winona Ave., Burbank, Calif., has announced an electrically-operated gate valve suitable for use as a shut-off control for large fuel pumps, oxygen, air, alcohol, oil and water. Designed originally for use as a shut-off valve for air-driven water injection pumps, the valve operates in ambient temperature ranges from minus 65 degrees F. to 250 degrees F. It will handle fluids (air or liquid) up to 550 degrees F.

Opening time for the valve is adjustable from 1/4 second to five seconds and in the event of a power failure the valve remains in the last energized



position. Current consumption at 250 degrees F. is 5.5 amperes at 17 volts. Featuring non-corrosive metal seals, the valve is light weight, adaptable to high pressures and easily serviced.



The Kollsman '160'—This is a schematic drawing of the internal mechanism of the new Kollsman altimeter featuring a counter type face with a single pointer. The drive mechanism shown here is close to actual arrangement

but the bellows mechanism has been simplified. In effect the double bellows minimizes the friction at the operating shaft and transmits the torque necessary to operate the counter and drive. It would require 93 standard bellows to accomplish the same work.



It is still Dawn in Aviation's Day!

... From the inspiration of its miraculous growth comes our faith

in the bright future of America's air transportation...

It has been little over 45 years since that day at Kitty Hawk when an American boy named Wright flew 120 feet at the rate of 30 miles an hour.

Since then many famous names—Rickenbacker, Lindbergh, Wiley Post, "Hap" Arnold, "Tooe" Spaatz, Hoyt Vandenberg and scores of others—have written glorious exploits in aviation's logbook.

The Berlin Airlift today proves in peace what the India-China "Hump" proved in war—that air transportation's *utility* is matched only by its *flexibility*.

We of American Airlines have backed our faith in aviation's future with more than words. Within the past three years we have spent \$75,000,000 for a completely new postwar Flagship Fleet.

Early 1949 will see the retirement of all DC-3 and DC-4 aircraft on American's routes. These airplanes, in peace and in war, made possible many of transportation's greatest achievements. For years their sturdiness and reliability set new standards in aviation. However, newer and faster planes of even greater dependability have made these earlier types yesterday's airplanes—by the demanding standards of 1949.

American Airlines will enter 1949 with a completely new fleet of Douglas DC-6 and Consolidated Convair Flagships, each a leader in its field. This 300-mile-an-hour Flagship Fleet is ready to serve you with comfort, speed, reliability and safety. This is ample evidence of our faith in the future of air transportation—indeed in the future of America itself.

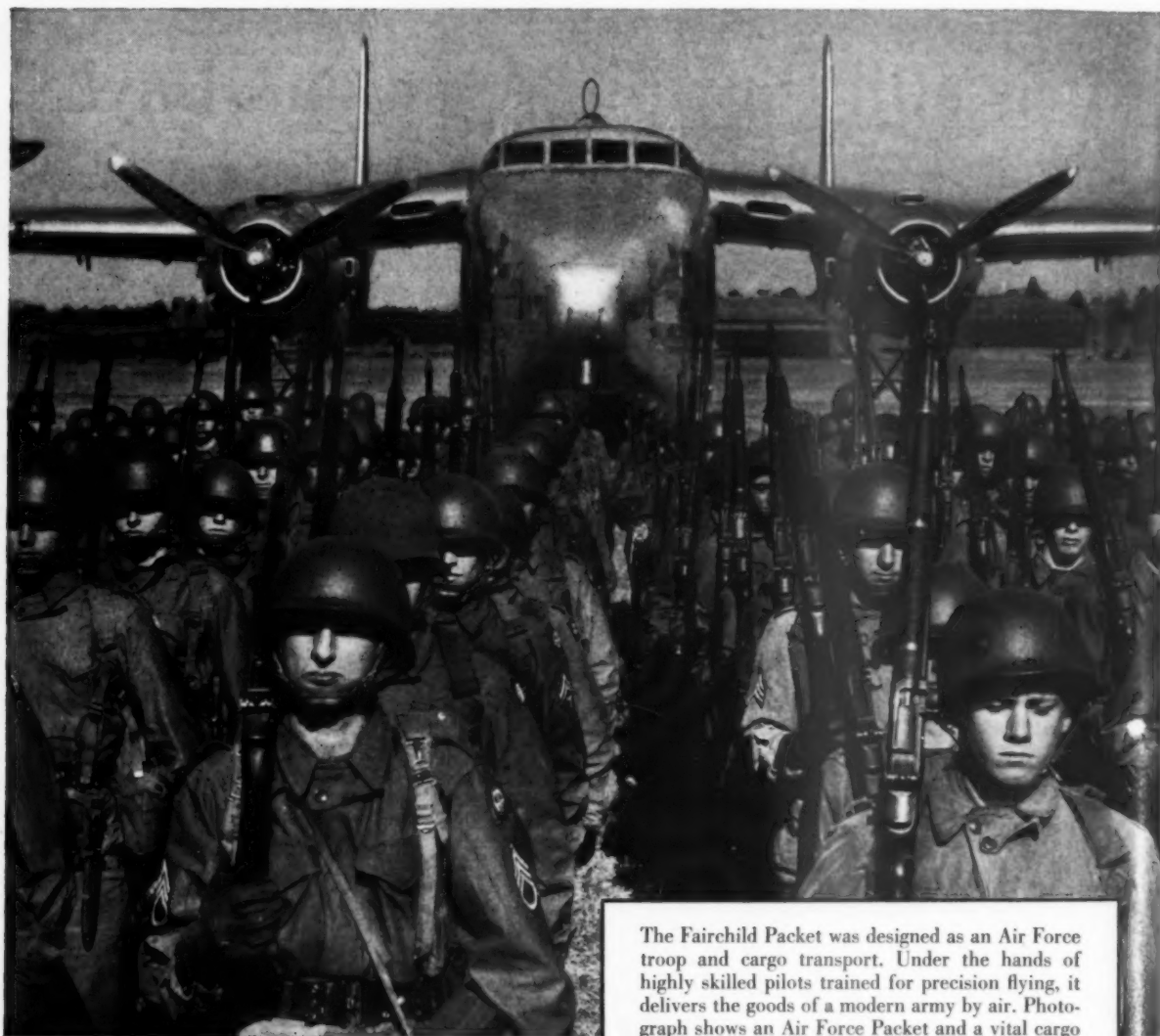


AMERICAN AIRLINES

AIRBORNE

Transportation by the Air Force of vital troops and vast quantities of material is a reality today. Those responsible for the strategy of national security know that often the only roads open are sky roads. Time is essential—and wings are swift.

Fairchild engineers, through painstaking research, have provided aeronautical techniques that meet such giant problems of today... and that will be equal to the problems of tomorrow.



The Fairchild Packet was designed as an Air Force troop and cargo transport. Under the hands of highly skilled pilots trained for precision flying, it delivers the goods of a modern army by air. Photograph shows an Air Force Packet and a vital cargo... men of America's new air transportable team.

 **FAIRCHILD**

ENGINE AND AIRPLANE CORPORATION
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

Divisions: Fairchild Aircraft, Hagerstown, Md. • Ranger Aircraft Engines, Farmingdale, N. Y. • Nepa, Oak Ridge, Tenn. • Fairchild Personal Planes, Strother Field, Kansas
Fairchild Pilotless Planes, Farmingdale, N. Y. • Al-Fin, Farmingdale, N. Y. • Subsidiaries: Stratos Corporation, Farmingdale, N. Y. • Duramold Aircraft Corporation, New York 20, N. Y.

Tulsa's 2nd Master Plan

A master plan for further development and improvement of Tulsa Municipal Airport over the next 10 to 20 years was approved last month by the Board of Park Commissioners. The plan was drafted by airport manager C. W. (Charlie) Short, Jr., whose original master plan, drafted in 1928, was completed last year.

The plan calls for construction several years from now of a new terminal building at a location more suited to the handling of a great influx of airline traffic and private flyers than is the present structure. New hangar construction will be authorized from time to time as the need arises.

A new control tower, 75 feet high and of steel and stucco construction, also is included in the program. It will be approximately 24 feet square, and will house all the latest traffic control equipment. This will be started within the next 12 months, as also will the installation of a high-intensity lighting system on one of the two 7,000-foot north-south runways. New taxiways connected to the principal runways will be constructed to facilitate taxiing out to and back from landing and take-off positions.

The new master plan will be carried out, as was the plan which preceded it, with reserve funds of the airport, plus some Federal airport aid.

Tulsa's airport at present has six large runways, over three miles of taxiways, adequate hangar space, a modern lighting system, ILS equipment, and other improvements, and it claims to have more acreage than any airport in the U. S. with the possible exception of New York's Idlewild.

New Terminal for N. Y.

Some relief from the congested traffic condition at New York's East 42d Street airlines terminal has at last been promised by the Triborough Bridge and Tunnel Authority. Through Manhattan Air Terminals, Inc., a subsidiary set up solely for that purpose, the Authority will undertake to build a new airline terminal on First Avenue between 37th and 38th Streets.

Airline engineers have drafted a proposed design for the structure, and plans call for the airlines to occupy the street and mezzanine floors and a public parking garage the upper six to eight floors. Industry representatives were consulted in plans at a meeting held last month. Final costs were also up for consideration by interested parties.

To protect itself, the Bridge and Tunnel Authority is expected to require that the airlines pledge certain revenues, sign binding leases for the term of any bond issue, probably 25 years, and agree to reimburse the city for tax losses and meet other conditions before it will build the terminal.



Lima Terminal—Shown here is the terminal building at the new airport serving Lima, Peru. It houses, among other things, a post office, cocktail lounge, restaurant and coffee shop, banks and a central telephone system. The airport, said to be the finest in South America, was begun by the Peruvian government in 1944 and was completed in late 1948. It is but a short drive from the Peruvian capital.

Simplicity in Rules

In too many cases airport rules consist of lengthy and dull documents that tend to confuse the relatively few who read them. But such is not the case at Tucson (Ariz.) Municipal Airport, where the rules have been simply stated in four paragraphs and printed on a 3 x 5 card, on the reverse side of which are printed general tips to airport patrons and tenants under the headings of Speed Limit, Vehicular Parking, No Smoking and Off Limits.

The friendly tone of the rules is re-

flected in the final paragraph, which reads: "Please observe our policy and any special rules or notices you may find posted for your benefit and protection. Always feel free to call at the manager's office for interpretation of unusual cases or to report violations. With your cooperation, we'll both be happy and safe."

Author of the rules was R. W. F. Schmidt, former superintendent of the airports branch of the CAA's Sixth Region, who is now manager of the Tucson Airport Authority.

Twin Cities Win Round in Airport Feud

The Minnesota Department of Aeronautics received a setback last month in its feud with the Minneapolis-St. Paul Metropolitan Airports Commission, when an examination of the latter's financial transactions, ordered by Governor Youngdahl, gave the Commission a clean bill of health.

Immediate basis of the investigation was a critical public examiner's report on MAC's purchase of Flying Cloud Airport, but the order was viewed generally as another move in a long-continuing program of "harassment and obstruction" to which the MAC reportedly has been subjected.

In a widely-discussed editorial on the subject, the St. Paul Pioneer Press defended the Commission, saying: "The Twin Cities are trying their best to cooperate in an airport program, which however is being delayed and

frustrated on every conceivable pretext on the state level. It is high time the MAC were freed from their interferences."

Continuing, the editorial said the issue apparently was whether the Twin Cities should control their own airports or whether they should only foot the bill while the state does the controlling, and it stated that "if the state government aspires to control the airports of the metropolitan district, the financial cost of their support should be assumed by the state, and their financial investment returned to the cities."

The editorial, reprinted in the Minneapolis papers, reacted strongly to the support of Robert Aldrich, executive director of the MAC, and to the discredit of L. L. (Les) Schroeder, State Commissioner of Aeronautics.

HOUSTON AIR-GATEWAY

LA PAZ, BOLIVIA

Two fast, non-stop flights weekly, each way, now connect Lima, Peru and La Paz, Bolivia to the Braniff system serving the U. S. and Latin America.

RIO DE JANEIRO

Another Braniff first—non-stop flights across the heart of South America from Lima to Rio in 9½ hours! Braniff will inaugurate this new service soon with two DC-6 flights weekly, each way.

For information on South American travel or shipping call your Braniff office, local airline or travel agent.



BRANIFF International AIRWAYS
PASSENGERS • AIR MAIL • AIR PARCEL POST • CARGO

FASTEST SERVICE ALL FLORIDA AND HAVANA, CUBA

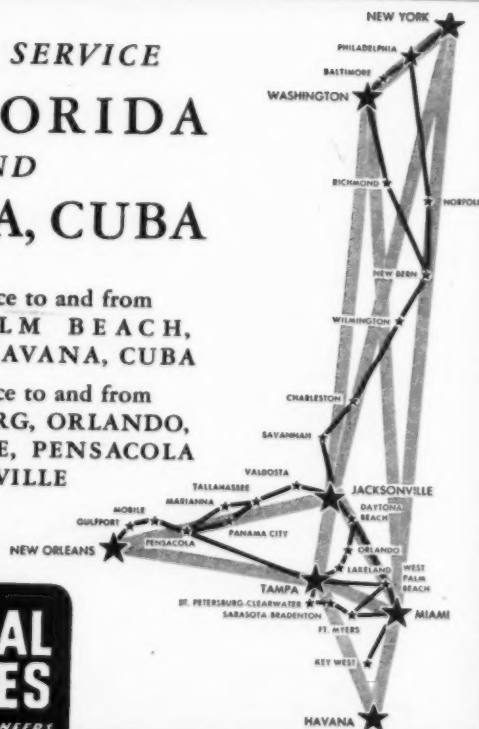
- ★ Direct DC-6 Service to and from MIAMI, PALM BEACH, TAMPA and HAVANA, CUBA
- ★ Direct DC-4 Service to and from ST. PETERSBURG, ORLANDO, TALLAHASSEE, PENSACOLA and JACKSONVILLE

Fly with Confidence on



NATIONAL AIRLINES

ROUTE OF THE BUCCANEERS



Airport Briefs

THE TREND toward making big-city airports virtually complete communities in themselves has uncovered a new wrinkle in Boston, where application has been made for space in the new central terminal building at Logan International Airport to accommodate a chapel. This should be a great convenience to Boston air travelers, most of whom are of the Catholic faith . . . Things are humming at Baltimore's new Friendship International Airport. Concrete footings for the passenger terminal building have been poured, and the steel reinforced uprights are in place. Hard surfacing of aprons, taxi strips and passenger approachways has been completed. Despite the good progress made to date, however, the airport probably will not be open to airline use until early 1950.

Clark County, (Las Vegas) Nevada, is mighty proud of the new high-intensity runway lighting system at McCarran Field, one of the first public airports in the Far West to have such equipment. Developed jointly by General Electric and American Gas Accumulator Co., the system was installed by the Frank Electric Co., of Hayward, Calif. . . . Even a visitor from Lower Slobovia probably could find an interpreter to help him on arrival these days at La Guardia Field's international terminal, where a new round-the-clock special services unit is on the job, ready to greet inbound passengers in any of 22 different languages, ranging from Polish to Hindustani.

Passengers at San Francisco International Airport soon will be freed from exposure to even the infrequent adverse weather there. Now being built and slated for completion in eight to ten weeks are two new frame concourse fingers to provide shelter for passengers boarding planes at any of 12 loading positions. Passengers at present follow roped-off paths with no cover over them . . . From Dick Jamison, director of the Maryland State Aviation Commission, comes word that Cambridge, an Eastern Shore community on All American Airways' new feeder routes, has been authorized by CAA to advertise bids for construction of its airport. Project application is expected to be filed this month. Only work remaining to be done at Frederick (Md.) Municipal Airport is interior work in the terminal building, the seeding contract and completion of the field lights.

R. J. Schmitz has been named acting manager of General Mitchell Field, Milwaukee, following the retirement of Maj. S. E. Piasecki, manager of the field for many years. Schmitz, formerly asst. mgr., on Feb. 1 turned over to Midwest Airways, Inc., and Anderson Air Activities the gasoline concession and tie-down facilities which the county formerly handled . . . Minnesota's Aeronautics Dept. says in its biennial report that it hopes to create more emergency-type landing areas, located in such a manner as to serve the resort areas of the state as well as to provide additional safety for airmen. Several will be seaplane bases in the lake country.

—K. S.

AMERICAN AVIATION

Air Forwarders Plan Freight Drive After Lifting of Ban

The air freight forwarder last month gained legitimate status as a part of the air transportation industry for an experimental period of five years, paving the way for an answer, possibly within a matter of months, to the question of whether the influence of the forwarder on the certificated airlines would be good or bad.

Legitimacy of the forwarders as indirect air carriers was seen as virtually assured on Jan. 26 when the Seventh Circuit Court of Appeals in Chicago lifted a mid-November judicial order staying the provisions of the Civil Aeronautics Board's decision in the Freight Forwarder Case. The appeal of 15 certificated airlines from the decision had not been abandoned at this writing, but indications were that most of the carriers were ready to drop the case.

Whether this meant they would also welcome the forwarder as a part of the industry was another question. For their part, the forwarders were represented as willing to forget the bitter verbal attacks some airline representatives had made on them during the arguments in the case before the CAB and in the court, and to work with the airlines in developing a greater volume of air cargo traffic to the benefit of both.

Forwarder Viewpoint. John Stewart, president of Air Dispatch, Inc., of Cincinnati, and also president of the Air Freight Forwarders Association, is optimistic on this point.

"I believe the top officials of most airlines recognize that we have much to offer them," said Stewart. "Even before the CAB decision, air freight forwarders were responsible for a substantial portion of the cargo business of a number of the domestic carriers, and we see no reason why we cannot do much more for them now that our status has been somewhat clarified and we are in a position to do a little planning and to expand our facilities.

"It is our conviction that by the end of the five-year period authorized by the Board the beneficial effect of freight forwarder operations will be fully recognized by the industry and by CAB."

Stewart added that many airline traffic people have worked with the forwarders and recognized their usefulness for some time, despite the fact that the official position of their employers in the CAB

arguments had been "100% against" the forwarder.

As to the contention that the forwarders would divert cargo from the certificated airlines to the non-certificated all-cargo carriers, Stewart answered:

"We certainly are not going to turn against the non-certificated carriers who stuck by us during our fight for legitimacy, but neither are we going to favor them over the certificated airlines. Assuming competitive rates, we forwarders will give our business to the carrier, certificated or non-certificated, which offers us the most expedited service."

Delay Denied. Another point on which Stewart was most emphatic was the charge that the air freight forwarders would nullify much of the speed advantage of air transportation by holding shipments for consolidation so as to be able to reap the benefit of the spread between the higher low-volume rates and the lower high-volume rates.

"The conception of a forwarder receiving a package in mid-afternoon and holding it in a warehouse until midnight while waiting for more packages to accumulate is utterly false," he said. "Consolidation in the great majority of cases is done on paper and in the pickup trucks—we call it pre-consolidation."

He said the domestic air freight forwarders would offer two types of service and two kinds of tariffs. One, carrying a higher tariff than most airline cargo tariffs, would be for a Blue Ribbon service which would be about the same as air express service.

The other would be a regular air cargo service at rates about comparable to those charged by the airlines, the big advantage to the carriers being that the forwarder would assume responsibility for pickup and delivery services, interline transfers, billing, insurance, etc. Some forwarders will offer both types of service, and some additionally will handle international air cargo.

Limited Field. How big will the air freight forwarder business become? No one knows, but John Stewart and other informed individuals doubt the number will ever exceed 50 or 60, and most of these will be small single-station forwarders, specializing in shipments between a few points or in shipments of selected commodities. Stewart's own company, one of the largest, now has 30 consolidation and distribution stations serving most of the country, and may eventually have as many as 50 such stations. It is his opinion that the number of forwarders operating on a scale anywhere nearly as large as this

will be fewer than 10, and probably not more than six or seven.

Fifty-eight forwarders were listed as eligible for Letters of Registration in the Freight Forwarder Decision, and the door was left open for others to qualify. It is not anticipated that many more will qualify, however, because of the extensive know-how required for a successful forwarder operation. Nearly half of the original 58 named already are out of business. Most of the survivors are members of the Air Freight Forwarder Association, which now has a membership of 26.

The air freight forwarders previously had to operate almost entirely on a contract basis. They now must convert to operation as indirect air carriers, but this changeover presents no particular difficulties and no substantial outlays of capital.

Officers of the Air Freight Forwarder Association, in addition to Stewart, are: Arthur Cofod, Air Express International Agency, Inc., New York, executive vice president; J. D. McPherson, Airborne Flower Traffic, Inc., San Francisco, secretary; George Haney, Skyways Freight Forwarding Corp., New York, assistant secretary; Peter A. Bernacki, Philadelphia, treasurer; Richard Spada, Personal Air Freight Co., Boston, v. p. on international affairs; and John Emery, Emery Air Freight Corp., New York, v. p. on domestic affairs.

Cargo Briefs

A new CAB Economic Regulation (238.3) makes a distinction for the first time between passenger and all-cargo flights with regard to layover restrictions. Passenger flights have been and still are restricted to stops not exceeding 45 minutes' duration at intermediate route points, but all-cargo flights under the new rule may make stops of up to two hours . . . **Pan American Airways** recently flew 20,000 lbs. of amusement park devices, including a complete roller coaster and a "whip" ride, from Miami to Cuba in response to a hurry-up call from the operator of a carnival outfit now touring the island.

With machinery and parts for the Marshall plan countries comprising nearly one-fourth of its shipments, **Trans World Airline** showed an overall 35% increase in international cargo for the year ended Jan. 30, second anniversary of its all-cargo overseas service, as compared with the previous year's volume. TWA flew 212 all-cargo flights during the two years, and 38% of its total international cargo last year was carried on such flights . . . Latin American demand for U. S.-made pharmaceuticals, such as penicillin, streptomycin and duracillin, gave **Peruvian International Airways** 40% of the total air freight carried on its flights between New York, Washington, Havana, Panama, Lima and Santiago in 1948 . . . **The Flying Tiger Line** has estimated that commercial air freight operations in U. S. in 1948 totaled 140,000,000 revenue ton miles, and says it and three other non-certificated cargo carriers flew about 40% of the total.



Stewart

NEA Plans One-Third Fare Cut for Unreserved Seats

Another in the ever-growing string of special fares for airline passengers was proposed this month by Northeast Airlines: a plan under which, until Apr. 30, unreserved seats would be sold at one-third reduction from regular one-way fare between intermediate points on its system.

Northeast had had a fair degree of success in maintaining its long-haul passenger business this winter, but short-haul traffic was in the doldrums. Seeking a solution, the company shied away from cutting schedules, on the grounds that a reduction in frequency would drive passengers to other forms of transportation. And it did not believe that a coach fare service would be practicable, because of the short-haul nature of the routes and because an operation late at night would increase indirect costs out of proportion.

"We are proposing the sale of non-reserved space for two-thirds of the one-way fare, tickets to be sold only from the passenger's point of origin to the next scheduled stop on the flight involved," said George F. Scott, NEA's general sales manager.

"These tickets would be sold only to those passengers willing to travel on a stand-by basis. The plan is aimed at stimulating intermediate traffic and is in no way a price reduction measure. Intermediate low fares are offered only through a corresponding reduction of reservation service.

"We expect that a great number of potential air travelers now using ground transportation, particularly between those points that are of a short-haul nature, will be sold on travel by air. In other words, seats now otherwise unsold will be utilized to develop new airline customers. A new market will be tapped."

At Ground Rates. Whether or not NEA described the move as a reduction, passengers who were willing to take their chances of being "bumped" at any intermediate stop would find it possible to fly at nearly ground transportation rates. For example, Portland-Augusta fare would be \$2.60 against reserved space of \$3.90; Boston-Concord \$3.06 against \$4.90.

NEA asked the Civil Aeronautics Board for permission to put the new fare into effect on less than usual 30-day notice on routes north and east of Boston and through the cape and island

points between Boston and New Bedford.

Usual notice was filed for non-competitive Boston-New York points, and for competitive points over the same segment. In connection with the latter, NEA President George Gardner said "if our competitors feel that this is not a plan with which they would go along but one which would be satisfactory if limited to trips after 8 p. m., this would be helpful. We sincerely feel, however, that it should be tried out on a round-the-clock basis."

Confusion for Cut-Raters

A slight state of confusion is interpolating itself into the sweetness and light of the \$99 non-certificated carriers. The jumping-jack of the trade, Edward Ware Tabor, is up to new tricks and his competitors don't quite know what to do about it.

Young, enthusiastic, imaginative Tabor is cutting rates again. Originator of the magic figure of \$99 for a coast-to-coast trip, Tabor has now charged headlong into the \$88 bracket—while still continuing \$99 flights as well—and in addition has popped forth with 10% discounts for round trips and "family plan" discounts as additional inducements to attract the cut-rate market to his operation. You can round trip now on Tabor's Trans-American Airlines for as low as \$158 plus tax.

Rival operators are divided in their attitude toward the latest Tabor caper. "He won't be in business long," observed one. "You can't make money at \$158."

But others, recalling when Tabor gave the non-sked business its biggest shot in the arm by cutting the rate from \$118.30 to \$99, aren't so optimistic about his ultimate fate. "Anyway you look at it, he may play hob with business," they argue. "We better be prepared to meet his competition."



Scott

Tabor, who formerly operated Trans-Luxury Airlines and then Trans-Atlantic Airlines, is now v.p. and general manager of Trans-American.

'Curtiss Curvairs.' Trans-American timed its new tariffs with the introduction of C-46 equipment in its transcontinental non-sked service. These are described in the advertisements as "the new giant 50-passenger Curtis Curvair luxury airliners."

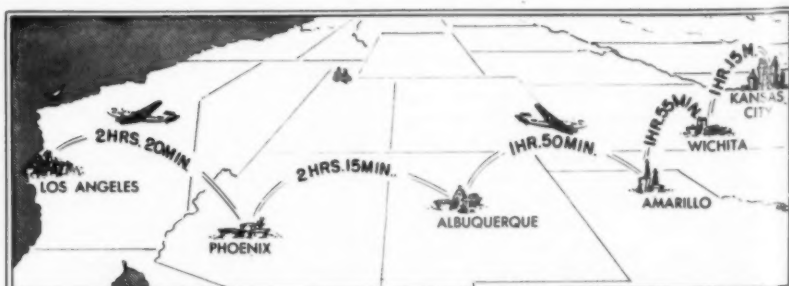
Last November Sky Coach, Ltd., a Tabor ticket agency, was announced as having disposed of its offices. Now, Sky Coach Air Travel has opened up in Los Angeles to book passengers on Trans-American. Both \$88 and \$99 fares are advertised. This leads to some complications. For example, you can fly from Los Angeles to New York for \$88, but it costs \$99 to go to Cleveland. It's explained that the \$99 flights stop at Cleveland; the \$88 ones don't.

Both the \$88 and \$99 flights apply on Trans-American, but the \$99 flights—in the "Curtiss Curvair"—take only 12 hours and land at the more convenient Newark airport whereas the \$88 flights take longer and land at Teterboro, Sky Coach Air Travel ticket agents explain.

Trans-American's "family discount" has a unique and different angle. It amounts to an 11% reduction on a second ticket, for a wife, brother or any other member of a family. But it stops right there; there's only one discount. Thus if a family of four flies, three pay full fare.

Tabor's rivals are marking time for the moment. But it is a foregone conclusion he won't be permitted to get away with his discounts, or his C-46 equipment, without a fight if he succeeds in luring business away from the other lines.

Fred Miller, president of Air America, already has taken a preliminary protective step by filing a competitive tariff with the CAB. Although heretofore Air America has flown only DC-4 equipment and Miller is a staunch four-engine man, he declares he'll buy C-46's if he has to. Other non-certificated carriers hint they'll act similarly if that's the way the wind blows.



'Sky Coach' Route—A reduced-rate "Sky Coach" service extending more than halfway across the continent was inaugurated Feb. 7 by Trans World Airline over the route shown above. Flights are made in DC-3's and require about 10 hours, but the one-way fare of \$59.50 from Kansas City to Los Angeles offers a 36% saving over regular fare for the benefit of thrifty travelers.

NEW SERVICES

Pan American Airways on Feb. 1 added a third daily round-trip Miami-Nassau. Traffic to all Caribbean winter resorts is well ahead of last season, company reports.

Eastern Air Lines is now serving Rome, Ga., on St. Louis-Atlanta and Atlanta-Chicago routes.

Helicopter Air Service, Inc. plans to open its certificated mail routes around Chicago on May 2.

Chicago & Southern Air Lines and **Delta Air Lines** have signed an interchange agreement for through one-plane service Kansas City-Miami. CAB approval is required, and the interchange requires extension of Delta from Birmingham to Memphis, with Memphis as interchange point.

British Commonwealth Pacific Airlines is putting DC-6's on the Pacific in mid-February. From Feb. 16 BCPA frequencies will be increased to two round-trips weekly San Francisco-Sydney and one trip weekly San Francisco-New Zealand. There will be no extra charge for sleeper accommodations.

Tours & Tariffs

American Airlines will offer from Feb. 16 (if CAB approves) a plan under which passengers traveling in either direction over that portion of AA's route that includes Ft. Worth-Dallas and El Paso may go by way of Mexico City for \$59 in addition to regular fare. AA is also arranging low-cost all-expense tours of Mexico.

West Coast Airlines and **United Air Lines** are offering passengers from WCA communities not served by UAL transportation to Chicago and points east at the rate from Seattle-Portland. Rates between the WCA cities and Seattle-Portland are eliminated.

Colonial Airlines has announced a \$126 one-way fare to Bermuda for passengers in a number of eastern seaboard cities. Under the plan, a passenger will pay the same price to fly to Bermuda from his home city as he would to fly there from New York or Washington.

Northwest Airlines and **United Air Lines** are giving passengers from 17 UAL cities in Oregon and California uniform fares to the Orient. One-way fare from each of the UAL cities to Tokyo is \$659, to Shanghai and Manila, \$726. UAL-NWA transfer point is Seattle-Tacoma.

Robinson Airlines is offering a reduced family fare plan, effective on Mondays, Tuesdays and Wednesdays.

United Air Lines and **Trans-Canada Airlines** have signed an interchange agreement expediting Canada-U.S. cargo shipments. The companies will honor each other's airbills without re-billing.

Braniff Airways, in cooperation with Eastern, Delta and National, is offering reduced holiday fare to Havana via New Orleans and Miami. Until Apr. 30 a passenger can fly from Ft. Worth-Dallas to New Orleans or Miami, and then to Havana, returning Havana-Houston-Dallas-Ft. Worth. Fare is \$4.10.

Over the Counter

By Eric Bramley



Sales Promotion

A plan believed to be unprecedented in air transportation is being instituted in Baltimore, and it furnishes an example of how the airlines can cooperate when they put their minds to it. It was becoming increasingly evident that although Baltimore is one of the nation's 10 largest cities, the amount of air transportation produced there was extremely small. So nine airlines have gotten together, have practically thrown competition out the window, and started out on the joint campaign to sell air transportation to the city. Airlines involved are **All American, American, Capital, Colonial, Eastern, National, Northwest, TWA** and **United**. It will be interesting to see the results.

Pan American Airways is planning to "unveil" its first Boeing Stratocruiser in Washington on Mar. 2. It'll be a big show, with courtesy rides, etc. Same thing is planned later for all PAA gateway cities . . . **Western Air Lines** put out quite a direct-mail piece on elimination of free meals. It was a reproduction of newspaper and magazine stories on WAL's plan to eliminate meals. Theme was: "Which do you want, dollars or doughnuts? The public says dollars, in the form of lower fares on Western Air Lines." Very effective . . . As nice a booklet as has come out in a long time is **Pan American-Grace's** "Travel Made Easy the South American Way." Contains helpful information on customs, immigration, etc. for each South American country, plus other travel tips . . . **Mid-Continent Airlines** has recruited all its hostesses as "flying sales girls" to make certain that all passengers are acquainted with family fare plan. MCA has also launched a 10-point sales program aimed at more first-riders. Part of the program involved \$2.50-\$3.00 sightseeing rides at different stations . . . **TWA** is now promoting "Paris in the spring" in its ads . . . **United Air Lines** has released a 28-frame color slidefilm entitled "Mainliner Meals." Film and accompanying booklet give complete story of the airline's meals. It's available to schools, educators and other interested groups on a free-loan basis . . . **Trans-Canada Air Lines** is pushing its DC-4M North Stars with a booklet, "Your Armchair in the Sky."

Capital Airlines started Sunday sightseeing flights at Washington and despite little advance fanfare carried 24 people on two trips the first day. Casey Britt, district sales manager, says he knows of at least three first-riders who bought airline tickets as a result of the ride . . . **Continental Air Lines'** roundtrip sales contest (at end of each day, company paid employee a nickel for each round trip they'd sold) boosted system roundtrip sales from 28% in September to 51.5% in December. In other words, every other ticket sold in December was a roundtrip.

American Airlines is distributing to employees and to the public, a concise and helpful summary of latest rules covering travel between the U. S. and Germany . . . **American Overseas Airlines** is playing up travel to "two of the finest winter recreational areas in the world, Garmisch and Berchtesgaden in the Bavarian Alps" . . . **Capital Airlines** has issued an easy-to-read direct mail piece on advantages of charter flights . . . **Railway Express Agency's** new booklet, "Leonidas Learns His Lesson," tells how a new shipping employee learned all the angles on how to pack and handle shipments to go via air express . . . **Rex Werner**, TWA's art director, is reported to have received several attractive job offers as a result of his fine work on the company's 1949 calendar.

Traffic

Why weren't more airline men at the recent conference of collegiate athletic coaches on the west coast? Coaches have a big voice in swinging a terrific amount of charter business. Yet airline representation was reported to be very small . . . In Jan. 15 issue we reported that **Colonial Airlines** had challenged **Continental's** claim in **Official Airline Guide** that its 290,000,000 passenger-miles in 14 years without fatality was a safety record "unsurpassed by any public carrier." Colonial points to 19 years without fatality. Stan Halberg, Continental's general traffic and sales manager, says Continental isn't quarreling about it but was going under the impression that "perfect is about as good as you can get." He hopes both safety records continue. Now comes Walter Robinson, **Hawaiian Airlines'** station manager at Hilo, pointing out that Hawaiian has never had a fatality since the start of operations 19 years ago. More power to everyone . . . Special pat on the back to Edwin Lee, **Braniff Airways'** station manager at Muskogee, and all personnel. Muskogee completed 1948 without being charged with a single "station controllable" delay . . . **Scandinavian Airlines System** carried 24% more passengers to and from New York and Europe during 1948 than in 1947. Total was 15,601 against 12,555 in 1947 . . . **Colonial Airlines** in 1948 carried 142,563 passengers over its domestic system, an increase of 7,058 over 1947.

Court Decision Dims Chances For Easing GI Restrictions

The finality of a recent court opinion upholding the Administrator of Veterans Affairs in his administration of the GI Flight Training program indicates that the only source of relief may be the appropriation committees of Congress.

At this writing, no bills had been introduced in Congress which would require the VA Administrator to change his handling of the flight training program.

Veteran committee sources were of the opinion that if the regulations are to be changed, it will have to be when Congress considers the Independent Offices Appropriations bill. It was during consideration of this bill last year that specific restrictions on the use of Federal funds for flight training were enacted.

However, there is a difference of opinion as to whether the language was intended to be as restrictive as the Administrator has interpreted it to be. It is certain that an attempt will be made to liberalize the language.

The far reaching court decision involved a suit brought by Willie G. Slocumb, of Norfolk, Va., who sought to enjoin VA from refusing him flight training. Slocumb, who was supported by AMVETS, is a licensed commercial photographer. He applied for flight training in preparation for making aerial photography a career. VA denied his application, he said, because he failed to establish that his training was in connection with his present or contemplated business or occupation.

District Court Judge David A. Pine, of Washington, D. C., first held that the court did not have jurisdiction. In granting VA's motion for dismissal, Judge Pine said that under the Servicemen's Readjustment Act, the decisions of the VA Administrator are final and no other official or court shall have jurisdiction to review. The court also stated that Slocumb had not exhausted all administrative remedies but even if he had, the court still would not have jurisdiction to review the case.

New FAI Lightplane Rating

The Federation Aeronautique Internationale and the National Aeronautic Association have adopted a new system for classification of light airplanes for official record purposes. New classifications are based on airplane weight (in flying order), rather than on engine cylinder displacement.

The changes are as follows:

First category, formerly all aircraft having an engine cylinder displacement of less than two liters (122 cubic inches), now all planes with gross

weight of less than 500 kilograms or 1,102.3 pounds.

Second category, formerly for cylinder displacement of between two and four liters (132-244 cu. in.), now for weight between 500 and 1,000 kgs., or 1,102.4 to 2,204.6 lbs.

Third category, formerly for cylinder displacement between 4 and 6.5 liters (244-397 cu. in.), now for weight between 1,000 and 1,750 kgs., or between 2,204.7 and 3,858 lbs.

Fourth category, former for cylinder displacement between 6.5 and 9 liters (397-549 cu. in.), now for weight between 1,751 and 3,000 kgs., or between 3,848.1 and 6,613.9 lbs.

Fifth category, formerly for cylinder displacement between 9 and 12 liters (549-732.3 cu. in.), now for weight between 3,001 and 4,000 kgs., or between 6,614 and 9,920.8 lbs.

Briefing the News

One of biggest distributorship deals in some time was the purchase by the K. P. Bowman Co., of Oakland, of Pathfinder Flying Service, Ltd., of Stockton, Calif. Deal carries with it the Cessna distributorship for Northern California and Nevada, which Bowman will move from Stockton to Oakland Airport, where it leases extensive hangar space. Dealers will be maintained in eight California and Nevada cities, and others probably will be appointed in near future.

Atlas Aircraft Co. was to start pro-

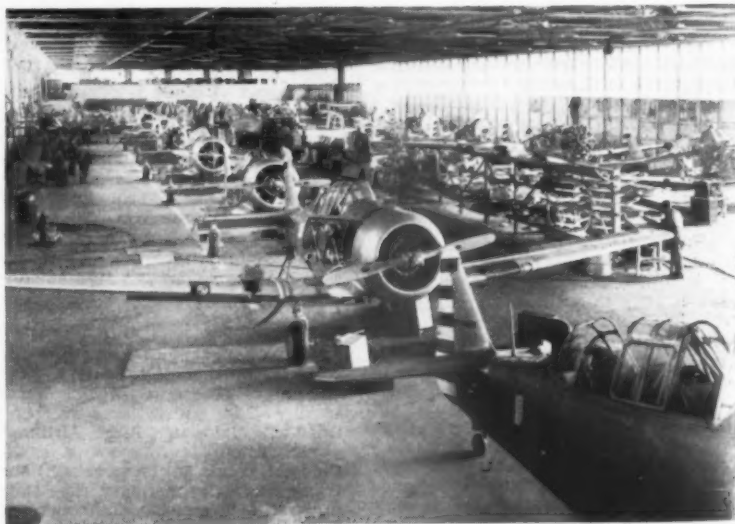
duction of the all-metal, four-place Atlas H-10 personal plane at its Hemet, Calif., plant late last month. Company's first announcement said the plane was designed to sell at low figure of \$2,995. First 10 planes off the line will be demonstrators for dealers.

Montana State College and the Montana Aeronautics Commission will jointly sponsor a two-day short course covering spraying and dusting of crops from the air. Course will be given Mar. 17-18 at Montana State College, at Bozeman . . . Island Air Ferries, Inc., of MacArthur Airport, which is conducting a charter and contract operation pending the acquisition of capital with which to finance implementation of its feederline certificate, says its 1948 loss, exclusive of depreciation charges, was \$1,500. It lost \$71,345 in 1947 and \$31,786 in 1948. A \$75,000 RFC loan contracted in 1946 has now been paid off.

First sale of a Hiller 360 helicopter was made to B. F. Hodges, of Walnut Creek, Calif., who will use it for dusting and spraying operations. Sale was made through Rotary Wings, Inc., of Jensen Field, at Sacramento.

A new aeronautical chart of Montana is being made available by the State Aeronautics Commission to flight operators in the state for resale at 75¢ per copy. The Florida State Improvement Commission also has issued a new aeronautical chart of the Everglades State . . . Air Associates, Inc., has moved its Los Angeles branch into new quarters at Grand Central Airport, Glendale, and the airport company has closed its own retail appliances store.

Wiggins Airways reports it broke even on its fixed-base operations at Norwood, Mass., last year before counting a \$50,000 depreciation charge. Its 1947 operating loss was \$130,000.



Production Line Maintenance—The production line method of overhaul employed by Grand Central Airport Co. at Glendale, Calif., gives this maintenance and overhaul facility all the appearance of a manufacturing plant. The double line of AT-6 training planes makes it possible to gain the benefits of crew specialization in improving quality and lowering costs of overhaul.

Summary of Feeder Airline Mail Rates

AMERICAN AVIATION publishes below the second in a series of three studies of current mail rates paid by CAB to certificated airlines. This study deals with feederlines and includes with them the air mail pickup operation of All American Airways and the helicopter mail service which Los Angeles Airways operates in the Los Angeles metropolitan area. Trunkline mail rates were presented in table form in the Jan. 15 issue.

Five of the feederlines whose rates are shown below have been given permanent rates by CAB. In most cases, these are sliding scale rates in which mail pay goes down as the airline's load factor goes up. The carrier is given an incentive to increase its passenger loads because its income from the increased load more than offsets mail pay loss.

Pioneer Air Lines was the first carrier to be given a sliding scale load factor rate, and similar rates issued

since then are sometimes called the "Pioneer type rate." All American Airways' pick-up operation, while still being flown, will soon be suspended by the Board and the company will begin service on a newly-granted feeder route carrying passengers, mail and express.

CAB has refused to extend the life of Florida Airways beyond Mar. 28, and unless it changes its mind between now and then, the airline's mail rate will not extend beyond that date.

Carrier	Rate	Daily Base Mileage	Yield Per Rev. Mi. Flown	Yield Per Ton-Mile	Remarks
All American ..	54.70c per plane mile for two daily round trips 79c per plane mile for segments receiving only one daily round trip	.....	54.70c	2147.67c	Permanent rate. Has been challenged by AAA. Covers pick-up mail route only. Effective from Sept. 1, 1946.
Challenger	60c per plane mile May 1, 1948-March 31, 1949	4,294	60.00c	2508.06c	Temporary rate. Carrier received \$530,506 equal to 65c per revenue plane mile for period May 3, 1947-Feb. 29, 1948.
Empire	65c per plane mile when load factor is 30.99% or below	2,836	63.76c	3284.54c	Permanent sliding scale load factor rate. For each 1% rise in load factor, rate does down 0.60c per mile. Carrier received \$1,126,715 equal to 88.16c per revenue plane mile for period Sept. 28, 1946-Feb. 29, 1948. Effective from Mar. 1, 1948.
Florida	79.35c per plane mile	2,304	70.69c	6950.63c	Permanent rate effective from June 1, 1948. Carrier received \$859,960 equal to 85.35c per airplane mile for period Jan. 10, 1947-May 31, 1948.
Los Angeles	\$1.25 per plane mile 75c per plane mile for all mileage over 33,000 per calendar month	33,000 monthly miles	124.30c	1170.98c	Temporary rate covering helicopter mail operation, effective May 1, 1948. Carrier received \$1.50 per airplane mile flown from Oct. 1, 1947-April 30, 1948.
Monarch	Time Period Decrease Rate 65c Dec. 1, 1948-March 31, 1949 50c April 1, 1949-June 30, 1949 40c After July 1, 1949	.....	44.88c	2753.85c	Temporary rate effective from Nov. 27, 1946. CAB show cause order issued Jan. 5 proposes an increase in this rate by changing the time periods for decreases.
Piedmont	Time Period Decrease Rate 60c per plane mile Feb. 20.-Aug. 31, 1948 55c Sept. 1-Nov. 30, 1948 50c Dec. 1, 1948-Feb. 28, 1949 45c March 1-May 31, 1949 40c June 1-Aug. 31, 1949 35c After Sept. 1, 1949	8,332	54.76c	4720.12c	Temporary rate effective from Feb. 20, 1948.
Pioneer	48c per plane mile when load factor is 31.99% or below	12,628	46.70c	1781.44c	Permanent sliding scale load factor rate. For each 1% increase in load factor rate goes down 0.65c per plane mile to a minimum of 7.50c per plane mile. Effective from May 1, 1948.
Robinson	Time Period Decrease Rate 60c per plane mile Sept. 19, 1948-April 30, 1949 55c May 1-July 31, 1949 50c Aug. 1-Oct. 31, 1949 45c Nov. 1, 1949-Jan. 31, 1950 40c Feb. 1-April 30, 1950 35c May 1, 1950 and after	2,612	.....	.....	Temporary rate effective from Sept. 19, 1948.
Southwest	55c per airplane mile when load factor is 41.99% or less	7,500	55.30c	2840.52c	Permanent sliding scale load factor rate. For each 1% rise in load factor rate goes down 0.60c per plane mile. Carrier received \$1,893,658 equal to 81.14c per revenue mile for the period Dec. 2, 1946-March 31, 1948.
Trans-Texas ...	Time Period Decrease Rate 55c per airplane mile July 1, 1948-March 31, 1949 50c April 1-June 30, 1949 40c July 1, 1949-March 31, 1950 35c After April 1, 1950	8,160	31.60c	1013.82c	Temporary rate carrier received \$784,736 for period Oct. 11, 1947-June 30, 1948.
West Coast	Time Period Decrease Rate 60c per airplane mile Dec. 5, 1946-June 30, 1947 55c July 1, 1947-March 31, 1948 50c April 1-June 30, 1948 40c July 1, 1948-March 31, 1949 35c After April 1, 1949	3,480	32.60c	5123.22c	Temporary rate.
Wis. Cent.	Time Period Decrease Rate 65c per airplane mile Sept. 1, 1948-March 31, 1949 60c April 1-June 30, 1949 50c July 1, 1949-March 31, 1950 45c April 1-June 30, 1950 35c After July 1, 1950	5,944	61.29c	4943.67c	Temporary rate. Carrier has applied for increase. Carrier received \$283,663 for period Feb. 24-Aug. 31, 1948.

NOTE: Figures in yield per revenue mile flown column indicate only yield for all revenue miles flown by the carrier and do not show the yield per mail revenue mile. Yields per mile flown on designated mail schedules would show somewhat different results. Because of this, the yields indicated for Trans-Texas and West Coast are distorted and not necessarily typical monthly yields. All figures were computed by CAB for November, 1948. Yield data not available for Robinson.

U. S. Domestic Airline Traffic for November

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	MAIL TON-MILES	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES	TOTAL REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
American	232,986	110,870,000	178,113,000	62.25	764,196	425,945	2,220,676	14,228,013	24,882,323	57.18	4,374,694	4,292,534	97.25	
Boeing	48,325	16,278,000	31,469,000	51.73	83,987	69,751	97,620	1,807,073	3,886,067	46.50	938,267	940,219	98.11	
Capital	79,612	23,121,000	49,315,000	46.88	84,266	158,859	548,613	2,999,874	6,574,898	45.63	1,529,581	1,564,606	97.16	
Caribbean	5,892	378,000	896,000	42.19	634	1,275	32,237	84,094	38,333	36.803	36,803	98.94		
C & S	22,741	8,358,000	16,103,000	51.90	47,219	44,318	41,760	934,811	2,011,530	46.47	610,534	617,264	97.94	
Colonial	12,100	3,201,000	6,030,000	53.08	8,038	4,271	11,980	346,007	780,451	44.33	289,375	300,712	93.76	
Continental	12,457	4,434,000	9,585,000	46.36	15,873	8,001	25,434	473,622	1,047,606	45.21	459,423	443,940	99.92	
Delta	37,017	13,007,000	26,580,000	48.94	74,691	60,942	136,440	1,521,522	3,702,761	41.09	1,008,492	1,033,087	95.45	
Eastern	153,127	66,314,000	122,326,000	54.21	401,962	297,057	630,689	8,045,957	19,071,180	42.19	3,912,819	4,110,093	95.91	
Hawaiian	22,745	3,137,000	4,803,000	69.66	4,015	10,595	45,889	326,140	514,624	63.37	205,863	171,931	98.25	
Inland	5,538	1,961,000	3,715,000	52.79	10,054	4,767	7,442	209,642	384,375	54.54	189,809	191,400	98.81	
NCA	23,816	7,069,000	12,787,000	55.28	25,695	13,552	22,056	738,461	1,299,710	56.82	652,048	647,940	99.13	
National	17,992	9,297,000	22,730,000	40.90	28,533	65,770	68,633	1,113,696	3,249,105	34.28	560,557	577,690	95.64	
Northwest	17,743	3,375,000	7,061,000	47.80	6,728	5,780	11,665	328,994	701,036	46.93	239,790	287,754	80.90	
Northeast	42,098	21,997,000	48,388,000	45.46	188,646	117,330	324,644	2,800,669	6,091,855	45.97	1,350,933	1,431,342	93.32	
TWA	103,354	66,377,000	129,017,000	51.45	747,130	463,351	1,053,423	8,639,608	16,701,905	51.73	4,500,753	4,447,627	95.56	
United	148,094	84,449,000	148,479,000	56.88	836,586	576,927	1,970,559	11,494,261	22,313,638	51.51	4,445,661	4,516,682	94.89	
Western	21,552	7,697,000	16,690,000	46.12	36,541	23,700	47,346	844,482	1,960,206	43.08	520,316	526,530	97.28	
TOTALS	1,006,289	451,320,000	833,767,000	54.13	3,354,794	2,350,916	7,266,144	56,885,068	115,257,364	49.35	25,825,718	26,158,314	95.71	

U. S. International Airline Traffic for November

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	U. S. MAIL TON-MILES	FOREIGN MAIL TON-MILES	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES	TOTAL REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
American	5,654	4,015,000	8,341,000	48.14	7,064	1,904	119,814	563,641	1,210,580	46.56	200,658	222,187	87.84		
Amer. Overseas	6,024	15,970,000	24,397,000	65.46	197,239*	27,620	255,536	2,250,714	3,446,106	65.31	665,015	542,176	91.44		
Boeing	530	874,000	4,157,000	21.02	668	113	15,858	101,195	606,549	16.68	88,322	88,322	100.00		
C & S	1,476	1,535,000	4,941,000	31.07	1,024*	147	25,714	186,086	404,056	46.05	98,827	98,323	100.00		
Colonial	844	661,000	2,729,000	24.21	745*	91	7,088	80,421	400,876	20.06	62,084	61,052	98.46		
Eastern	687	714,000	3,077,000	23.20	3,131	113	25,336	107,736	396,552	27.17	62,400	62,400	100.00		
National	1,787	572,000	2,008,000	28.49	636	25,147	85,108	271,612	31.33	39,260	34,680	100.00			
Northwest	2,442	6,053,000	8,899,000	68.02	177,160	9,898	6,592	328,317	1,216,583	61.97	426,364	362,027	99.20		
Panagra	7,180	8,213,000	15,613,000	52.60	17,970	25,649	128,950	39,209	1,122,568	2,304,667	48.71	473,713	484,574	96.80	
Pan American	45,803	38,052,000	88,395,000	43.05	200,000	66,897	1,694,990	55,890	6,005,356	12,422,572	48.34	2,472,429	2,509,326	97.60	
Latin Amer.	8,984	23,050,000	31,567,000	73.01	284,042*	61,446	709,522	57,369	3,661,470	5,325,343	68.76	1,031,904	865,103	97.08	
Atlantic	7,367	23,571,000	31,915,000	73.86	401,045	42,281	667,350	3,473,322	4,873,318	71.27	1,349,608	1,263,208	99.99		
Pacific	2,367	2,515,000	4,743,000	53.03	38,609	367,457	668,675	1,039,385	64.33	200,619	192,253	98.51			
Alaska															
TWA	6,965	21,033,000	34,967,000	60.15	224,113*	92,236	409,624	3,077,263	4,949,651	62.17	1,004,614	921,876	99.93		
United	1,992	4,760,000	6,557,000	72.90	73,761	13,733	589,129	860,024	68.50	153,600	144,000	100.00			
TOTALS	100,102	151,608,000	272,306,000	55.67	1,627,207	328,282	4,278,901	674,595	23,189,267	40,708,536	57.67	5,329,417	7,853,505	97.68	
* In addition to mail ton miles the following international parcel post ton miles were listed: American Overseas 24,681; C & S 5; Colonial 110; PAA Atlantic Division 24,707; TWA 33,586															

U. S. Feeder Airline Revenues & Expenses for November

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
All American	\$ 79,894	\$	\$ 78,949	\$ 822	\$	\$	\$	\$ 87,607	\$ 46,768	\$ 40,839	\$ -7,713
Challenger	88,041	19,618	66,689	704	892	113	111,015	52,921	58,094	58,094	-22,974
Empire	74,239	17,042	52,914	366	82	2,769	79,708	41,630	38,078	38,078	-5,469
Florida	55,058	9,035	46,778	122	48	53,251	26,254	26,997	1,807	1,807	1,807
Monarch	96,680	27,916	64,523	564	1,211	135,105	73,261	61,824	61,824	61,824	-38,425
Piedmont	156,007	56,105	98,037	800	586	339	183,217	110,624	72,593	72,593	-27,210
Pioneer	292,898	120,732	154,967	1,064	1,229	697	264,192	142,892	121,300	121,300	28,705
Robinson	207,767	60,690	113,110	1,400	2,979	312	8,331	198,756	101,719	97,037	9,011
Southwest	94,220	34,110	59,359	318	314	79	151,474	80,242	71,232	71,232	-57,244
Trans-Texas	63,095	29,281	32,942	366	59	426	104,802	48,993	55,899	55,899	-41,707
West Coast	41,334	6,136	34,507	360	46	29,172	69,591	29,172	40,419	40,419	-28,257
TOTALS	1,249,233	399,665	802,775	6,886	7,211	2,016	12,640	1,438,718	754,496	684,222	-189,486
Los Angeles	32,659	. . . .	32,659	. . . .	. . . .	. . . .	25,676	16,631	9,045	6,981	6,981
Challenger	102,157	27,477	69,884	3,366	1,108	233	125,093	60,101	64,902	64,902	-22,937

NOTE: These figures are taken from monthly reports filed by the airlines with CAB. The data are tentative and subject to later change.

Advertisers In This Issue

ADVERTISERS	Page
AIRResearch Manufacturing Co. Div. of The Garrett Corp.	2nd Cover
American Airlines, Inc.	35
The Babb Co., Inc.	32, 33
Bendix Aviation Corp. Eclipse-Pioneer Division	27
Scintilla Magneto Division	19
Braniff International Airways	38
Canadair Limited	3
Cee-Bee Chemical Company	30
Esso Export Corporation	7
Fairchild Engine & Airplane Corp.	36
Flightex Fabrics, Inc.	45
General Ticket Company	45
B. F. Goodrich Company	8
National Airlines	38
North American Aviation, Inc.	30
Phillips Petroleum Company	4th Cover
Pratt & Whitney Aircraft Division of United Aircraft Corp.	24, 25
Sperry Gyroscope Company	22
United Air Lines	14
Wilcox Electric Company	28
Wright Aeronautical Corp., Division of Curtiss-Wright Corp.	3rd Cover

new and used DC-3 and DC-4 parts, equipment and accessories at below cost!

For DC-3, DC-4, and P. & W. R-1830 and P. & W. R-2000 parts, accessories and components, contact:

Surplus Sales Representative,
Stores Dept., United Air
Lines Maintenance Base,
Bayshore Highway, South
San Francisco, Calif. Tele-
phone JUmo 8-2424.

Items are available for your in-
spection at the above address.
Prompt delivery. Guaranteed to
be as represented.



Classified Advertising

The rates for advertising in this section are as follows: "Help Wanted," "Positions Wanted," "Aircraft Wanted or For Sale," and all other classifications \$1.00 a line, minimum charge \$4.00. Estimate bold face heads 30 letters and spaces per line; light body face 40 per line; box numbers add two lines. Terms, cash with order. Forms close 20 days preceding publication date. Rates for display advertisements upon request. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1025 Vermont Avenue, NW., Washington 5, D. C.

FOR SALE

Exceptionally clean 8-place, D-18C Beechcraft. Hydromatic propellers, nose tank, etc. Write for details. F. J. Tolley, Spartan Aero Repair, Municipal Airport, Tulsa, Oklahoma.

WANTED TO BUY

DC-3's WANTED—Scheduled airline interested in long term lease of three airline-certificated, passenger modified DC-3's with Pratt & Whitney engines. Box No. 646, American Aviation, 1025 Vermont Ave., N. W., Washington 5, D. C.

AIRCRAFT MATERIAL WANTED

All AN Hardware, electrical items & components such as nuts, bolts, bearings, fittings, valves, circuit breakers, switches, lights, relays, pulleys, spark plugs, gas caps, etc. FOR SALE—Largest stock of aircraft parts and components on West Coast. 100% inspection, courtesy discounts to brokers. Immediate delivery.

COLLINS ENGINEERING CO.
9054 Washington Blvd.
Culver City, Calif.

POSITIONS WANTED

Supt. of Maintenance, 28 years experience large domestic and foreign scheduled airlines. Desire position either U.S.A. or foreign country. Box 644, American Aviation, 1025 Vermont Ave., N. W., Washington, D. C.

HELP WANTED

Wanted by Feeder Airline in Midwest: A & E Mechanics, Specialists and Aircraft Electricians. State qualification and availability. Send replies to Box 643, American Aviation, 1025 Vermont Ave., N. W., Washington 5, D. C.


MAINTENANCE SUPERINTENDENT—Operating feeder airline wants qualified man with well-rounded experience in all phases of airline maintenance. Should have several years trunk-line maintenance experience. Box No. 645, American Aviation, 1025 Vermont Ave., N. W., Washington 5, D. C.

WEATHER INSTRUMENTS

Barometers • Thermometers • Psychrometers
Anemometers • Wind Vanes • Rain Gages
Send \$1.10 in stamps for catalog

SCIENCE ASSOCIATES

401 N. BROAD ST., PHILADELPHIA 8, PA.



dependability

That's what you want and that's what we're famous for,
coast to coast — dependability, quality and accuracy!
We're licensed and bonded . . . have a staff of experts
to serve you.

TICKET PRINTING *by* General

GENERAL TICKET COMPANY

Division Cullom & Gertner Co. — 309 Fifth Avenue, N., Nashville 3, Tenn.

WORLD'S PREMIER AIRPLANE FABRIC

lighter

stronger

smoother

FLIGHTEX

FLIGHTEX FABRICS, Inc. • 93 WORTH STREET • NEW YORK 13, N.Y.

Leading Manufacturers of
Fabric and Tapes for the
Aircraft industry.



FLIGHTEX FABRIC

Export Representative
AVIQUIPO, Inc.
25 Beaver Street, N. Y.
Cable: AviQUIPO

WINGS OF YESTERDAY

25 Years Ago

Inauguration of a regular airplane passenger and express service between Tampa and Sarasota, Fla., via St. Petersburg, with a view to extend operations to Miami, was announced by Tamiami Air Line Co.

The Douglas World Cruiser Airplanes were selected for the Round-the-World Flight which the Army Air Service was planning to make about March 15, 1924. The flight was to start from Los Angeles bound for the Far East.

10 Years Ago

(In AMERICAN AVIATION)

CAA planned to complete instrument landing systems at 10 airports during coming year, at Burbank, Cleveland, Newark, Chicago, Kansas City, Oakland, Los Angeles, Salt Lake City, Cheyenne, and Albuquerque. Cost of each station was set at \$15,000.

D. G. Richardson, operations manager for Pan American Airways at Brownsville, Tex., was appointed operations manager for American Export Airlines' projected trans-Atlantic service.

LETTERS

Ramp Door Issue

To the Editor:

On page 11 of the Feb. 1, 1949, issue of AMERICAN AVIATION we note that Mr. S. J. Solomon, president of Atlantic Airlines, stated that he planned legal action against Southwest Airways on the patent which Southwest Airways holds for self-contained DC-3 steps built into the door and now used by Southwest Airways. According to the article, Mr. Solomon stated "The steps were designed by David Morrow, engineer for Atlantic Airlines, and we offered to make them available to the entire industry without patent protection," adding that he testified concerning the steps in CAB's Middle Atlantic Case in February, 1946."

In view of the fact that the principle of an aircraft door containing built-in steps was originally developed and patented by Vickers prior to July 22, 1940, perhaps Mr. Solomon should obtain Vickers' approval before he releases his plans to the industry. Our patent, frankly, covers relatively minor, though important, improvements on the Vickers design. Obviously, the steps themselves are no more patentable than the hole in the fuselage through which they retract.

However, we do not intend to argue the legality of this small problem other than to say that Southwest Airways actually designed and developed, at considerable expense, the door it is presently using and we believe we may be the first to actually use

such a door, at least in air carrier operations in this country.

T. R. MITCHELL
Vice President
Southwest Airways Co.

To the Editor:

Sam Solomon's claim that he invented the ramp door for aircraft, as quoted in the Feb. 1 issue of AMERICAN AVIATION, needs further examination. A comparison of the dates involved and a look at the prior art should clarify the matter.

The basic idea of attaching steps to an aircraft door is old. I know of an airplane built in the early twenties that had such an arrangement. Southwest's patent on its ramp door is a detail patent covering the mechanism used. The principal mechanism is the means of support when the door is in the ramp position. Two chains are used, which also serve as handrails, being held at proper height for this purpose by additional support arms. Other mechanical details, such as the method of locking, etc., also are covered.

Lockheed installed a ramp door on the Saturn, designed in 1943. An article by the writer published in 1944 makes reference to a step door for a feeder plane. These dates are all earlier than the 1946 date mentioned by Solomon.

The specification for the conversion of Southwest's C-47's was worked out late in 1945. This specification included the ramp door substantially as patented and presently used by Southwest and several other air carriers.

JAMES G. RAY
Airline Consultant
Washington, D. C.

To the Editor:

We have read with much interest your column entitled "Extra Section", in the current issue of American Aviation, particularly the paragraph referring to the passenger loading ramp and door combination.

As you indicated, Colonial Airlines, Inc. is among the airlines which have installed the combination door and loading ramp in their DC-3's. You may be interested to



know that the height of the first step on our door has been adjusted so that passengers have no difficulty whatsoever getting on or off the airplane, regardless of the load.

Colonial also modified the door and installed a larger release hatch, which can be easily operated from the inside by the stewardess. We have also added a Dural block on the outside of the door to protect it against any damage, in case it should make contact with the ground. The length

of the chains holding the door is being constantly checked and adjusted if necessary. Mr. Charles F. Watts, our director of maintenance, reports that the installation has been unusually successful, and he contemplates adapting it to our other DC-3's.

HANS GROENHOFF
Director, Picture Service Bureau
Colonial Airlines

Omni-Range Reliability

To the Editor:

We have developed the government sponsored NARCO-CAA lightweight omni-range receiver for the private pilots, and we are very much interested in your Feb. 1 review of the status of the omni-range stations.

According to your figures, you show only 160 omni-range stations in daily use of any kind, 11 of which are fully commissioned.

This does not jibe with our figures, which we confirmed by telephone to CAA this morning, which are 268 stations operating continuously with 16 completely commissioned. Our flight experience has indicated that all the stations are in continuous operation except when actual maintenance work or adjustments are being made. The time out of service does not seem to be greater than that experienced with the low frequency ranges.

You also say that our price is still too high for use in privately owned aircraft such as the "Cub and Aeronca". We have never anticipated that this class of aircraft would use our equipment since they do not now purchase even the \$37.50 low frequency two-way radio telephones which are available. Also airplanes of this class do not generally carry batteries, generators and electrical equipment required for the operation of omni-range equipment. Our letters of inquiry confirm the fact that the owners of this class of aircraft are not interested; and should they ever be, the market potential would increase to the point where equipment could be produced within the pocket-book limitations of such owners.

You state that even though the NARCO omni-range production sets are not expected to be available in March, CAA ground stations will not be ready to serve them. We are forced to disagree on this point and wish to cite our own experience in which we navigate at will nearly everywhere in the United States using nothing but the omni-range receiver.

JAMES RIDDLE, Pres.
National Aeronautical Corp.
Ambler, Penna.

(Editor's Note: Figures used in article were obtained from CAA's Office of Aviation Information the day the magazine went to press. CAA confirms that only commissioned stations can be considered as operating continuously, but even stations operating continuously are not necessarily usable. A large proportion of the stations operating have never been flight checked to determine accuracy. Aircraft Owners and Pilots Association estimates a 20-fold increase in number of communications sets in personal aircraft in the last two years. If omni-range equipment is to foster use of navigational facilities and aid in improving air safety, it would seem reasonable to expect it to serve the large segment represented in light aircraft.)

Fare Confusion

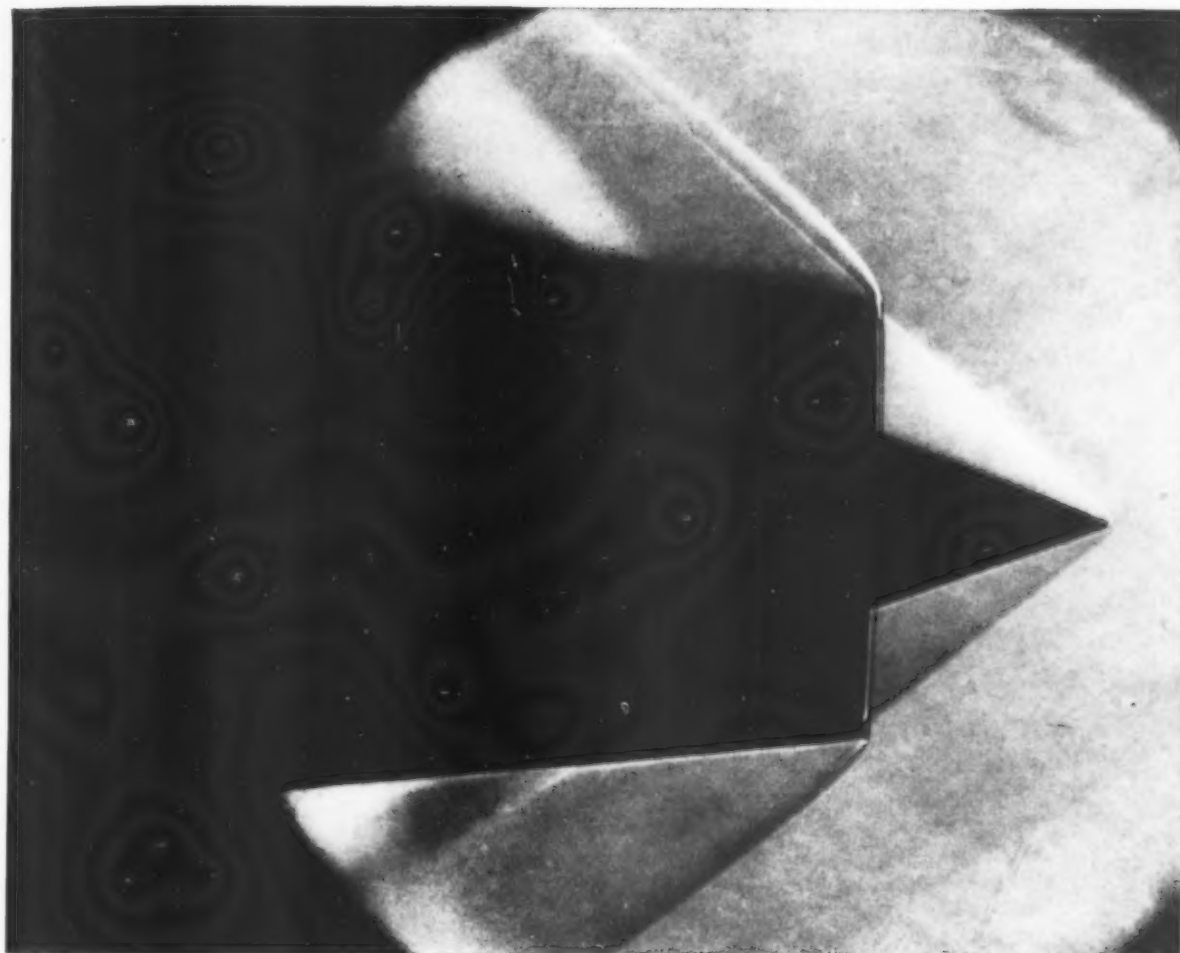
To the Editor:

American Aviation, Jan. 15, "10% Fare Increase . . ." calls attention to Eastern Air Lines' family-fare plan. Do you know something we don't know?

DOAN RUDD
EAL Traffic & Sales Mgr.
Charleston, W. Va.

(Editor's Note: Not in this instance. The airline fare picture has been so confused and vacillating these past few months that despite extra care an occasional slip does occur. Thanks to sharp-eyed readers like Rudd for setting us straight.)

AMERICAN AVIATION



This is an actual photograph of the flow pattern of air moving at twice the speed of sound.

TWICE THE SPEED OF SOUND

► A small-scale model of a ram jet inlet is mounted in Wright's supersonic wind tunnel. As the air flows at mach No. 2 (twice the speed of sound) through the tunnel, *schlieren* apparatus—an optical instrument—accurately photographs the influence of the jet's body lines upon the flow pattern of the air. The oblique lines in picture represent shock waves created by impact of body on air.

► These *schlieren* pictures provide valuable new data on the phenom-

non of compressibility—a condition that exists at the speeds attained by jet and rocket propelled aircraft and guided missiles.

► From them, Wright design engineers can determine the most efficient passage shapes for ram jets and other types of supersonic power plants.

► Another example of the integrated research that enables Wright Aeronautical to provide better power plants for the aviation industry.



POWER FOR AIR PROGRESS

WRIGHT

Aeronautical Corporation • Wood-Ridge, New Jersey

A DIVISION OF
CURTIS-WRIGHT
FIRST IN FLIGHT



OH JOY! SHIP AHOY!
IT'S THE NEW
NAVION
BY RYAN!

Meet the sweetheart of every airport! As shipshape a little beauty as ever rode the crest of the clouds! And when you're navigating around in your Navion, buzzing about on business, or just hopping off for happiness, remember that you'll get good service and fine products at the sign of the flying "66" shield!

Yes! dependable Phillips 66 products are used by many of the large commercial airlines of the Mid-west. Look for the orange and black Phillips 66 Shield with wings, at the big or little airports along your route! The Aviation Department, Phillips Petroleum Company, Bartlesville, Oklahoma.



AVIATION PRODUCTS

25c

T
tion
out
rev
car

hect
S
tran
late
peti
part
busi

T
to a
larg
a ti
of 1
fere
1946
perm
be s

Ar
is a
sked
tryin
inter
traffi
those
plan
way
desp
the p

M
carri
ment
Thos
ment
an a
been